USSR/Minerals

Card 1/1 Pub. 86 - 12/40

Authors : Budnikov, P. P. Memb. Corresp. of the Academy of Sc. SSR

Title : GAZHA

Periodical : Priroda 3, 81-82, Mar 1954

Abstract : Gazha - the name for sedimentary rocks - represents a natural gypsum mixture containing of from 20 - 90% of clayey substances and finely dispersed calcium and silica carbonates. Gazha often contains small amounts of water-soluble salts of sodium, potassium, magnesium, calcium and other metals, as well as organic admixtures and fragments of various minerals. The physico-chemical properties of Gazha, derived from different sources, are listed.

Institution : .....

Submitted : .....

USSR/Engineering - Construction Materials FD-1388

Card 1/1 : Pub. 41-15/18

Author : Budnikov, P. P., Corresponding Member, Academy of Sciences USSR

Title : Hydrothermally-treated clay-lime building material and theory of its formation

Periodical : Izv. AN SSSR. Otd. tekh. nauk 3, 137-145, March 1954

Abstract : Gives results of experimental investigation of the influence of technological factors on the hardening of clay-lime building materials, the influence of clays of various mineralogical composition on its compression strength, and a study of the chemical processes occurring during interaction of calcium

Institution :

Submitted : March 17, 1954

USSR/Engineering - Bibliography

FD-1390

Card 1/1 : Pub. 41-17/18

Author : Stol'nikov, V. V.

Title : P. P. Budnikov and I. L. Znachko-Yavorskiy. Granulated blast-furnace slags and slag cements. Promotroyizdat, 1953, 224 pp.

Periodical : Izv AN SSSR. Otd. tekh. nauk 3, 150-154, Mar 1954

Abstract : A review of the above book on blast-furnace slags and their properties, including data on the chemical and mineralogical composition and structure of slags, detailed description and comparative evaluation of the granulation of blast-furnace slags by the wet, moist, and dry methods, and utilization of slags in cement industry.

Institution :

Submitted :

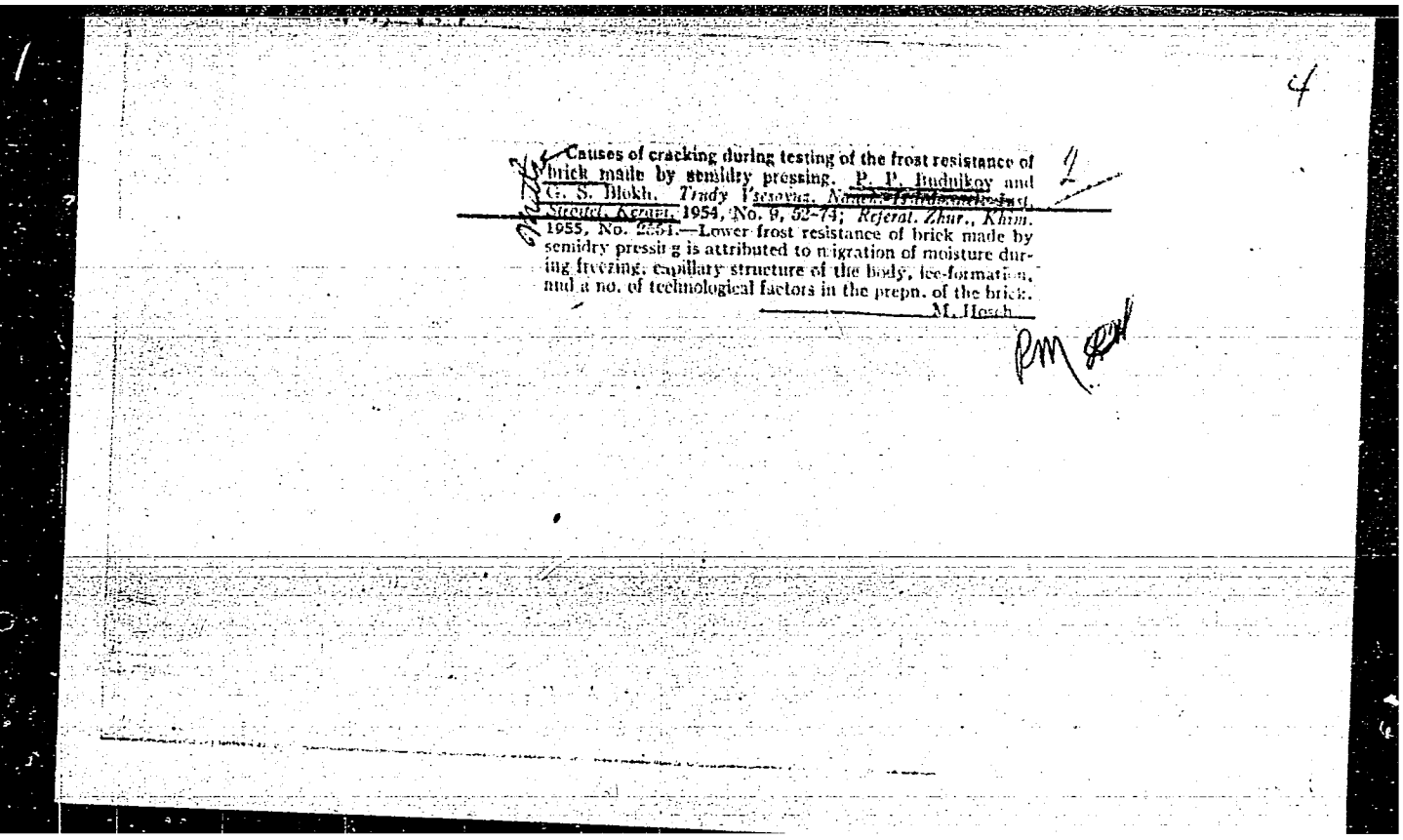
BUDNIKOV, P.P.; TRESVYATS'KIY, S.G.

Diagram of the composition of Na_2O—TiO_2 systems. Dop. AN URSR no.5:371-376 '54. (MLRA 8:7)

1. Diysniy chlen AN URSR (for Budnikov).
(Sodium oxide) (Titanium oxides)

BUDNIKOV, P. P. and KHVOSTNIKOV, Y. S.

"Investigation of Favorable Conditions for the Manufacture of Construction Material from Lime and Clay," translated into German in Silikattechnik, Vol. 6, No 4, pp 161-2, 181, Apr 54



Causes of cracking during testing of the frost resistance of brick made by semidry pressing. P. P. Budnikov and G. S. Blokh. *Trudy Vsesoyuz. Nauch.-Issledovatel. Stroitel. Keram. Inst.*, 1954, No. 9, 52–74; *Referat. Zhur., Khim.* 1955, No. 2551.—Lower frost resistance of brick made by semidry pressing is attributed to migration of moisture during freezing, capillary structure of the body, ice-formation, and a no. of technological factors in the prepn. of the brick.

M. Hosch

USSR/ Scientific Organization - Conventions

Card 1/1 Pub. 124 - 12/26

Authors : Budnikov, P. P., Member Corresp. of Acad. of Sc. USSR

Title : Our trip to Poland

Periodical : Vest. AN SSSR 10, 64-67, Oct 1954

Abstract : Brief notes and observations are presented by a member of the Soviet delegation who participated during the session of the Polish Academy of Sciences in Warsaw-Poland at which the development of the structural materials industry in Poland was discussed. Names of personalities attending the session are listed.

Institution : .....

Submitted : .....

Budnikov P. P.

Lime-clay building material produced by the hydrothermal treatment method and the theory of its production. P. P. Budnikov. (Chem. Technol. Inst. D. Mendeleev, Moscow). *Cement-Wapno-Gips* 10(19), 169–76(1954).—B. proves that the presence of clay in raw materials does not decrease the strength of bricks made from sand and lime by the hydrothermal process, i.e. by treating them in an autoclave with steam under pressure (8 atm. for 8 hrs.). During this process Al_2O_3 and SiO_2 from clay react with $Ca(OH)_2$, forming hydrated Ca aluminate and hydrated Ca silicate. Both these compds. bind the lime-clay building material (I). Bricks made by the above process, when stored under water, decrease at first and then increase their compressive strength, reaching after 6 months 230 and after 1 year 205 kg./sq. cm. The strength is greatly increased when I is heated between 300 and 800°. Compressive strength changed as follows: 1 hr. after production it was 185, after heating 1 hr. at 200° it was 250, after heating to 600° it increased to 420, and after heating to 800° it increased further to 540 kg./sq. cm. The reason for this behavior lies in the initial stages in an increase in compactness of the colloidal products of reaction and later on in addnl. reactions between clay and lime. The types of clay that can be used for the production of I are those contg. sand, those which are used for making red bricks, and shales. Clay should be crushed by rolls, then mixed with powd. lime by use of steam-heated rolls, then ground in a disintegrator, and stored in silos for maturing. Bricks are then formed (under a compression of 170–200 kg./sq. cm.) and treated with steam under 8 atm. pressure for 3.5–8 hrs. The whole manufg. cycle requires only 12–14 hrs. Bulk d. of such bricks is 1.85–1.97 kg./cc.; their thermal cond. is 0.694–0.853 kcal./m./degree/hr. and depends on the moisture content. Best results were obtained by using clay 72, sand 20, and lime 8, or kaolin 62, sand 30, and lime 8%. Water was added in both cases in an amt. 7–11%. Clay contained SiO_2 46.25, Al_2O_3 38.28, and Fe_2O_3 0.42; kaolin contained SiO_2 71.53, Al_2O_3 16.65, and Fe_2O_3 4.12; sand contained SiO_2 93.3%. F. J. H.

BUDNIKOV, P. P.

USSR/ Chemistry - Physicochemistry

Card 1/1 Pub. 104 - 12/14

Authors : Budnikov, P. P.

Title : Monograph on the physicochemical properties of glazes

Periodical : Stek. i ker. 11/3, page 29, Nov 1954

Abstract : A review is made of the book, "Physicochemical Properties of Glazes of High-Voltage Porcelain", by V. P. Barzakovskiy and S. K. Dubrovo, published by the Academy of Sciences of the USSR, in 1953, and containing 276 pages. The book deals with the way in which the electromagnetic and other properties of porcelain are effected by the quality of the glazing. A chapter by chapter analysis shows the book to merit a high rating.

Institution: .....

Submitted: .....

USSR/Chemistry - Refractories

Card : 1/1 Pub. 116 - 19/20

Authors : Budnikov, P. P. and Khramova, V. I.

Title : Refractories on the basis of reaction between kaolin and carbon. Mullite-carborundum and corundo-carborundum refractories

Periodical : Ukr. khim. zhur. 20, Ed. 4, 447 - 455, 1954

Abstract : The synthesis of corundo-carborundum refractories with high thermal and slag resistance as well as high-thermal deformation characteristics, obtained as a product of reaction between kaolin and carbon at 1750°, is described. The thermal conductivity of mullite-carborundum and corundo-carborundum refractories, is given in table. Four USSR references (1936-1952). Graphs, drawings, illustrations.

Institution : ...

Submitted : March 6, 1954

Budnikov P. P.

AID P - 1019

Subject : USSR/Chemistry

Card 1/1 Pub. 119 - 4/8

Authors : Budnikov, P. P. and Ginstling, A. M. (Moscow)

Title : Study of the mechanism and kinetics of reactions occuring in mixtures of solids

Periodical : Usp. khim., 23, no. 4, 491-506, 1954

Abstract : Critical review of the work of non-Soviet scientists. Emphasis of work done by Soviet scientists. Enumeration of problems still to be solved. Three tables, 83 references (64 Russian: 1909-1953).

Institution : None

Submitted : No date

BUDNIKOV, P. P.

USSR/ Engineering - Materials

Card : 1/1

Authors : Budnikov, P. P., Memb. Corres. of the Acad. of Scs. of the USSR

Title : Construction materials "hydrothermal treatment"

Periodical : Vest. AN SSSR, 24, Ed. 5, 49 - 51, May, 1954

Abstract : Obtaining structural bricks from sandy clay and lime is made possible by the so-called hydro-thermal method. A table shows the main characteristics of such bricks.

Institution : ...

Submitted : ...

BUDNIKOV, P. P.

Chem.

Chemical Abst.
Vol./48 No. 9
May 10, 1954
General and Physical Chemistry

Dmitrii Stepanovich Belyankin. P. P. Budnikov, A. S. Berezhnoi, O. K. Botvinkin, S. S. Davydov, Kh. G. Gevorkyan, K. B. Goryainov, V. P. Kuprianov, I. I. Kitaigorodskii, V. G. Kukolev, V. V. Lapin, A. A. Litvakovskii, V. M. Moskvin, S. A. Mironov, O. P. Mchedlov-Petrosyan, R. L. Peyznel, B. G. Skrauntaev, V. N. Yung, and M. O. Yushkevich. *Zhur. Prikład. Khim.* 27, 3–4(1954).—Obituary with portrait and summary of scientific work in phys. chemistry and the silicates. G. M. Kosolapoff

9-2-54

BUDNIKOV, P.P.

PEVZNER, R.L.

"Granulated blast-furnace slags and slag cements." P.P. Budnikov, I.L.Znachko-IAvorskii. Reviewed by R.L.Pevzner. Zhur.prikl.khim. 27 no.2:226-227 F '54. (MLRA 7:2)
(Slag) (Slag cement) (Budnikov, Petr Petrovich, 1885-) (Znachko-IAvorskii, I.L.)

Budnikov, P. P.

Subject : USSR/Chemistry AID P - 930

Card 1/1 Pub. 152 - 21/22

Author : Budnikov, P. P.

Title : Physicochemical properties of glazes of high-voltage porcelain, by V. P. Barzakovskiy and S. K. Dubrovo

Periodical : Zhur. prikl. khim., 27, no. 5, 573-575, 1954

Abstract : Review

Institution : None

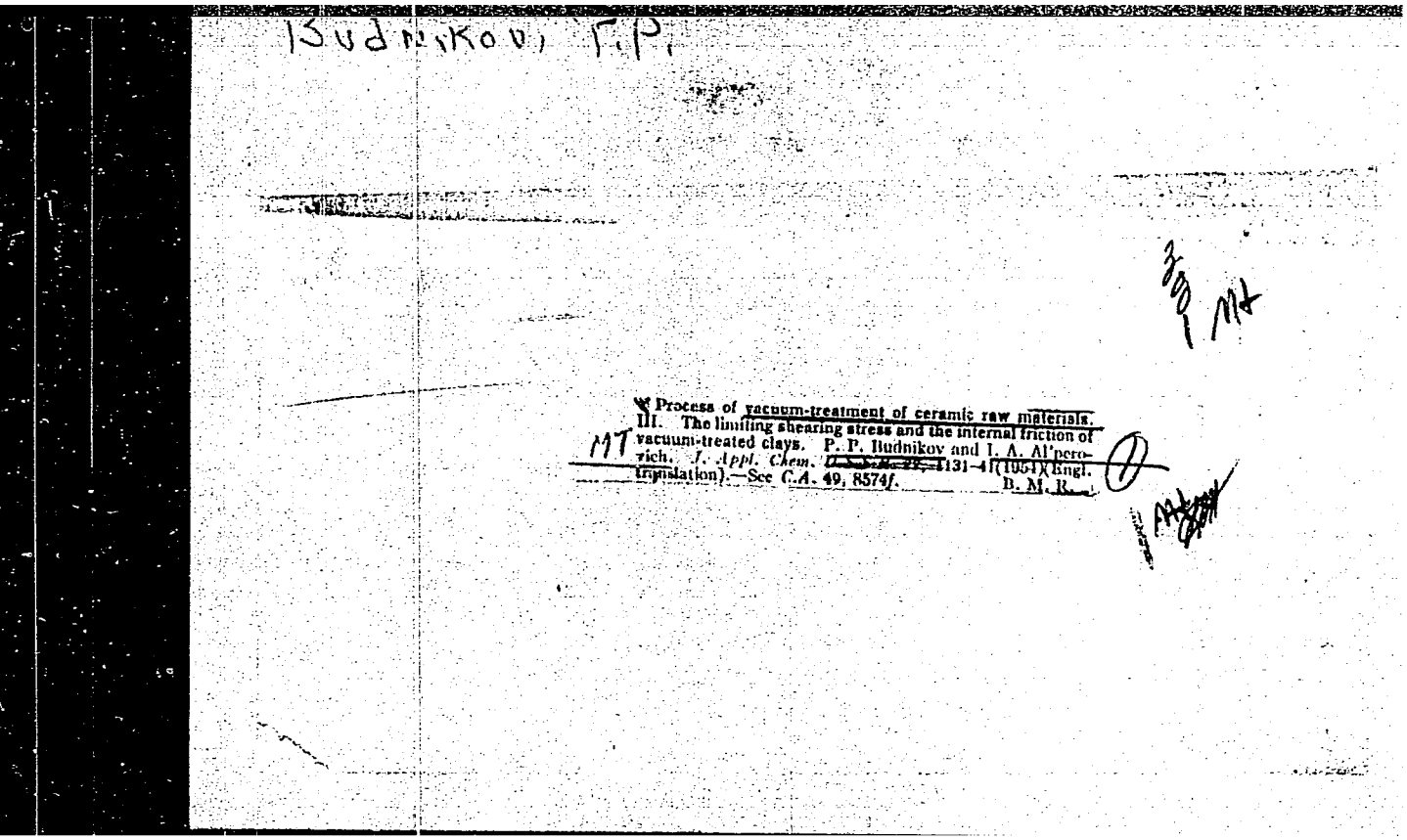
Submitted : No date

BUDNIKOV, P.P.

"Binding substances with surface-active additions." IU.M.Butt, T.M.Berkovich. Reviewed by P.P.Budnikov. Zhur.prikl.khim. 27 no.6:689-690 Je '54. (MLRA 7:8)
(Surface-active agents) (Butt, IU.M.) (Berkovich, T.M.)
(Binders (Chemistry))

BUDNIKOV, P.

"Technology of binding materials." V.N.IUng, IU.M.Butt, V.F.Zhuravlev, S.D.Okorokov. Reviewed by P.Budnikov. Zhur.prikl.khim. no.27 no.6:691-692 Je '54. (MLRA 7:8)
(Binders(Chemistry)) (IUng, Vladimir Nikolaevich, 1882-)
(Butt, IU.M.) (Zhuravlev, V.F.) (Okorokov, S.D.)



Budnikov, P.P.

MT

Process of vacuum-treatment of ceramic raw materials. III. The limiting shearing stress and the internal friction of vacuum-treated clays. P. P. Budnikov and I. A. Al'perovich. *J. Appl. Chem.* [illegible] 4131-41 (1951) (Engl. translation).—See *C.A.* 49, 8574f. D. M. R.

Budnikov, P. P.

USSR

Presence of vacuum-treatment of ceramic raw materials. III. The limiting shearing stress and the internal friction of vacuum-treated clays. P. P. Budnikov and I. A. Al'perovich. *Zhur. Prikład. Khim.* 27, 1194–208(1954); cf. *C.A.* 47, 9583c.—The effect of deaeration (mm. Hg vacuum) on the limiting shearing stress P_m, the internal friction f, and the cohesion c of 3 types of plastic clays (cf. *C.A.* 48, 9033e) was detd. The cone-penetration method (cf. Rebinder, *et al.*, *C.A.* 43, 4928d) in preliminary tests showed that P_m for these clays was invariant, indicating a homogeneous structure and the applicability of this method to this investigation; and that P_m was extremely sensitive to the moisture content. Accordingly, the moisture content of the clays was held within ±0.01%. By another device (described in detail) the shearing stress τ under several normal pressures σ was measured. From the straight lines of τ vs. σ, by the relation $\tau = f\sigma + c$, f and c were detd. graphically. Under pressures of 300–400 mm. Hg less than atm., P_m, c, and f changed slowly (the 1st 2 rising, the last falling); the corresponding effects increased rapidly, approaching verticality, at pressures 700–40 mm. Hg less than atm. The slow change was assocd. with the removal of mechanically held, macrodispersed air; the rapid change to the removal of microdispersed air. The presence of air lowers the plasticity of clays and cannot act as a lubricant.

I. Bencowitz

62 #011.

BUDNIKOV, P.P.

[Thermite corundum, its properties and application." Pevzner, R.L. Reviewed by P.P.Budnikov. Zhur.prikl.khim. 27 no.12:1334- D '54. (Corundum) (Pevzner, R.L.) (MLRA 8:2)

BUDNIKOV, P. P.

USSR.

The influence of the gaseous medium on the tendency of chromium oxide to sinter. P. P. Budnikov and S. G. Tresvyatskii. *Doklady Akad. Nauk S.S.S.R.* 95, 1041–2 (1954).—The sintering mechanism for Cr oxide varies with the different gaseous media in which it is heated. In oxidizing atm., a film of oxide of sexivalent Cr is formed, which accelerates sintering. Evidence for this is found in the yellow soln. resulting when air-heated Cr_2O_3 is ground in water. The same phenomenon is not observed in Cr_2O_3 heated in neutral atm. or under vacuum. A dense stable Cr oxide suitable for high-temp. refractory use is prepd. from 50% Cr_2O_3 heated to 1550° in N or 50% Cr_2O_3 heated in powd. form to 800° in air. Articles of the mixed refractory exhibit 5–6% shrinkage on heating in a neutral atm., a d. of 4.27 g./cc., porosity of 15.5%, compressive strength of 100 kg./sq. cm., mean coeff. of linear expansion of $0.2–6.4 \times 10^{-6}$.

C. H. Fuchsman

Budnikov, P. P.

62

Hydrothermal reactions between clays and free lime hydrate. P. P. Budnikov and M. I. Khigerovich. *Doklady Akad. Nauk S.S.S.R.* 96, 141–2(1954); cf. *Doklady Akad. Nauk S.S.S.R.* 90, No. 6(1953); *C.A.* 47, 1908g.—The reaction const. of the system kaolinite-$Ca(OH)_2$ (the clay from the deposits of Khotgkovsk and Nizhnekotel'sk) was detd. from analytical data and the changes of electrolytic cond. as a function of time. At 25°, $K = 0.00821$; at 100°, $K = 0.2236$. The temp. coeff. of the rate const. is $K_{t+n}/K = 1.53$. The "clay substance" is defined as the disperse phases of clay minerals below 2 μ size; ordinary clays also contain sandy admixts. which have their own reaction types with $Ca(OH)_2$. The first phase of the reaction is an agglomeration of the clay particles, indicated by an increase of the sedimentation rate from suspensions by 30–40 times and a considerable reduction of the plasticity. The activation energy of the chemisorption is 9700 cal./mole. The subsequent chem. reaction with a new formation of Ca silicate hydrates is too slow at room temp. to be of industrial interest; the autoclave process in satd. steam under 7–8 atm. pressure (at about 175°) is necessary for an adequate acceleration of the reaction.

W. Eitel

(1)

BUDNIKOV, P. P.

USSR/Chemistry - Chemical technology

Card 1/1 : Pub. 22 - 30/44

Authors : Budnikov, P. P., Memb. Corresp. of Acad. of Sc. USSR; and Al'perovich, I. A.

Title : Maximum shear stress and internal friction of desiccated clay

Periodical : Dok. AN SSSR 98/1, 115-118, Sep 1, 1954

Abstract : The maximum shear stress and internal friction of desiccated (vacuumed) clay was investigated. The relation between the max. shear stress internal friction, and the degree of air-removal from the clayey mass during the vacuum process is explained. The results are described in detail. Ten USSR references (1941-1953). Graphs.

Institution : .....

Submitted : April 12, 1954

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 25/56

Authors : Budnikov, P. P., Memb. Corres. of Ac. of Sc. USSR.; and Tresvyatskiy, S. G

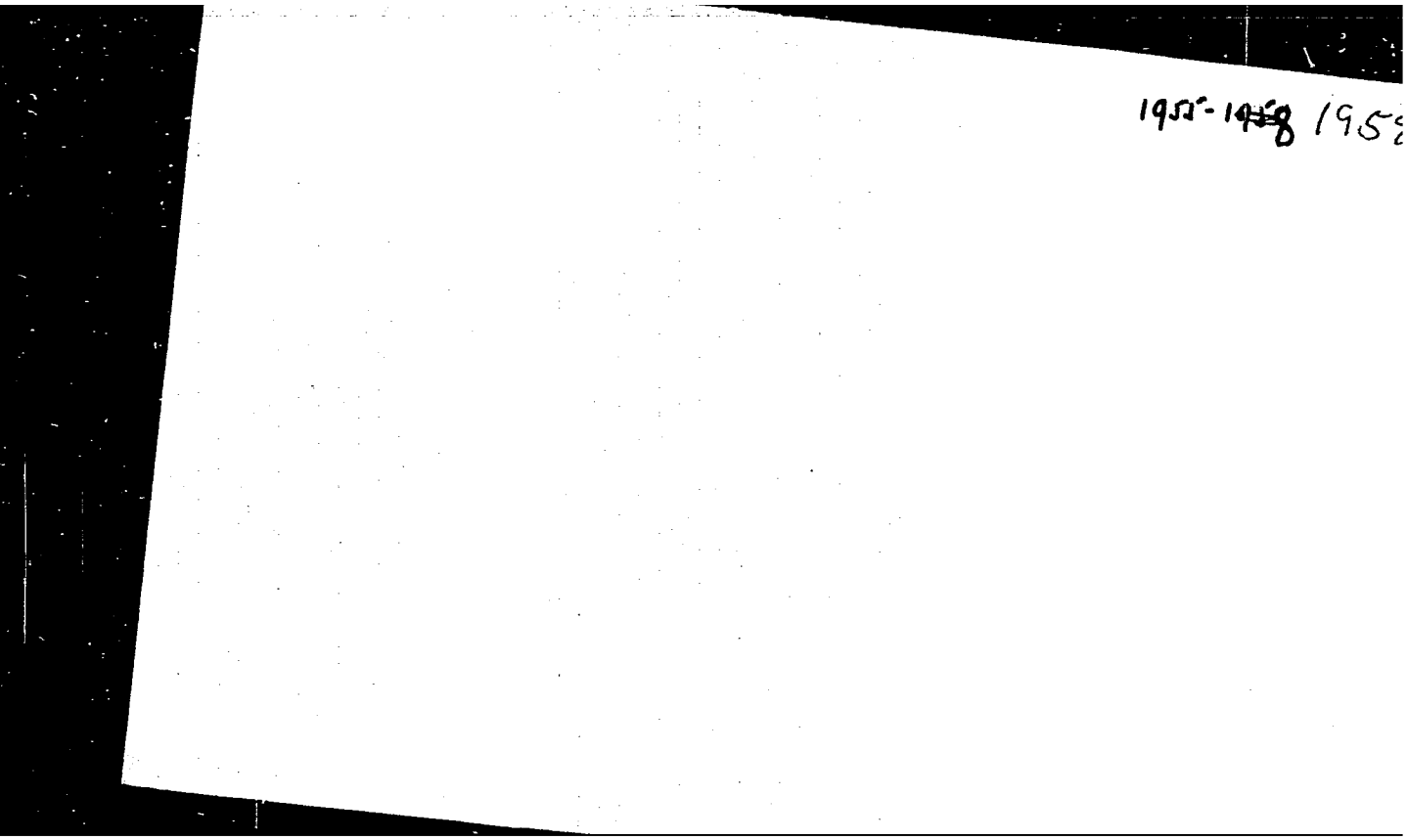
Title : Study of the structural diagram of GeO_2 - Li_2O

Periodical : Dok. AN SSSR 99/5, 761-763, Dec 11, 1954

Abstract : The presence in a GeO_2 - Li_2Osystem of Li_2GeO_3 and Li_4GeO_4 compounds with melting points of 1237 and 1295±3°, respectively, was established by study ing the structural diagram of the above mentioned system. The two eutectic discovered in the GeO_2 - Li_2O system, their percentage composition and orientations, are described. A polymorphous conversion of GeO_2 in compound containing from 85 - 95 mol. % of GeO_2 and 15 - 5 mol. % of Li_2O, was obser at a 1035±3° temperature. One German reference (1929-1931). Table; graph illustrations.

Institution : The D. I. Mendeleyev Chemical-Technological Institute, Moscow

Submitted : June 22, 1954



Badnikov, P.P.

Porcelain—Introduction to Its Technology (Farfor—Vvedenie v Tekhnologiyu). P. P. Budnikov and Ku. O. Gevorkyan. Gosudarstvennoe Izdatel'stvo Mestnoi Promyshlennosti RSFSR, Moscow, 1955. 202 pp., 71 illus. Price 6r. 55k.—This textbook is designed for the use of engineering technicians and students in higher educational institutions. The intent of the authors was to present the principles of the manufacture of porcelain and the engineering details. Exhaustive treatment of industrial machinery and equipment used in the large-scale manufacture of whiteware is purposely omitted. The text's nine chapters deal with the raw materials of the porcelain industry, basic processes in making porcelain bodies, the forming of porcelain articles, drying, glazing, and firing. The last three chapters are devoted to the properties of porcelain, a short review of industrial and decorative porcelain, and varieties of industrial porcelain. It would appear that the text fulfills the objectives of the authors satisfactorily. By American standards, the illustrations are few and inadequate, and details of the subject a little scanty. Some of the theoretical bases of the science are touched upon in a manner that would be considered both too advanced for the stage of education of the reader and too brief to do justice to the subject. In particular, the chapter on the firing of porcelain might well have been expanded into two chapters, with more attention given to the variations to be anticipated in practice and the equipment used in industry.

D.T.W.

BUDNIKOV, Petr Petrovich; redaktor; BEREZHNOY, Anatoliy Semenovich; BULAVIN, Ivan Anisimovich; GRISSIK, Boris Mikhaylovich; KUKOLEV, Grigoriy Vladimirovich; POLYBOYARINOV, Dmitriy Nikolayevich; AVGUSTINIK, A.I., doktor tekhnicheskikh nauk, professor, retsenzent; GLEZAROVA, I.L., redaktor; PANOVA, L.Ya., tekhnicheskiy redaktor.

[Technology of ceramics and refractory materials] Tekhnologiia keramiki i ogneuporov. Pod obshchei red. P.P. Budnikova. Izd. 2-e, perer. Moskva, Gos.izd-vo lit-ry po stroit. materialam, 1955. 698 p. (MLRA 8:12)

1. Deystvitel'nyy chlen AN USSR. 2. Chlen korrespondent AN SSSR. (Ceramic industries) (Refractory materials)

Budnikov, P.P.

MT

Expanding portland cement without formation of calcium aluminate sulfate. P. P. Budnikov and Z. S. Kosyreva. *Issledovaniya po Prikład. Khim., Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1955, 249–58.—Hydraulic cement was prepd. with calcined dolomite as the expanding agent. The optimum temp. of calcination was 800–900°. An addn. of 5–7% of the agent resulted in an expansion of cement mix from 0.100% to 0.200%. The expanding cement upon hardening during 3 days gave off more heat but after this period less heat as compared to one without the agent.

A. P. Kotloby

(D)

BUDNIKOV,P.; MATVEYEV,M., dotsent.

Quicklime in the production of silicate building materials. Stroi. mat., izdel. i konstr. 1 no.4:17-20 Ap'55. (MLRA 8:10)

1. Deystvitel'nyy chlen Akademii nauk SSSR.
(Bricks) (Building blocks)

Budnikov, P.P.

USSR/ Chemistry - Silicates

Card 1/1 Pub. 124 - 4/40

Authors : Budnikov, P. P., Memb. Corresp., Acad. of Sc., USSR

Title : Theoretical problems of the chemistry of silicates

Periodical : Vest. AN SSSR 1, 24-29, Jan 1955

Abstract : The relation between the science of silicates and the manufacture of structural and other silicate base materials is explained. The importance of the chemistry of silicates and structural materials in the national economy is discussed. The chemistry of silicates which was considerably enriched by the science of silico-organic compounds - silicones is analyzed. The various technical applications of these compounds are listed. The achievements of Soviet scientists in the field of refractories are listed.

Institution : .....

Submitted : .....

BUDNIKOV,P.P.; TRESVYATS'KIY,S.G.

Electric conductivity of typical refractory clays subjected to high temperatures. Dop. AN URSR no.2:165-167 '55. (MLRA 8:11)

1. Diysniy chlen Akademii nauk URSR (for Budnikov) 2. Moskovs'kiy khimiko-tekhnologichniy institut imeni D.I.Mendeleyeva
(Refractory materials--Electric properties)

USSR/Chemical Technology. Chemical Products and their Application. J-12
Glass. Ceramics. Building Materials.

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27595

Author : P.P. Budnikov, S.G. Tresvyatskiy.
Inst :
Title : Methods of High Temperature Thermal Analysis.

Orig Pub: Ogneupory, 1955, No 4, 166-173.

Abstract: The methods and equipment for the high temperature thermal analysis are described; they make the determination of the melting point of highly refractory oxides and their compounds up to 2200° possible. It is proposed to use a W-Mo thermocouple for temperature measurements and a Mo crucible in the shape of a plate for melting the substances. In order to protect the thermocouple and the plate from oxidation caused by the electric furnace provided with a heating tube of electrographite, N is let through at a speed of 20 to 30 lit per hour; the description of the furnace is given.

-56-

Card : 1/2

BUDNIKOV, P.P.

Melting easily reducible refractory oxides in an electric arc. P. P. Budnikov and S. G. Tresvyatskii (D. I. Mendeleev Chem.-Technol. Inst., Moscow). *Dopovidi Akad. Nauk Ukr. R.S.R.* 1955, No. 5, 478-9 (Russian summary, 479-80).—An arc, 180-200 v. and 10-12 amp., is formed between a rectangular or round electrode of the refractory oxide and a C electrode. To increase the cond. of the former, the assembly is heated to 700-800° in a tubular furnace placed at 5-10° angle to the horizontal electrodes so that the gases formed sweep upward, protecting the fused globule. Globules, sufficient for phase analyses, were thus prepd. from Fe_3O_4, NiO, CoO, Cr_2O_3, $CoCr_2O_4$, $MgCr_2O_4$, etc. This method could not be applied to oxides of low elec. cond. at 700-800° (Al_2O_3, MgO, etc.). L. Rencowitz

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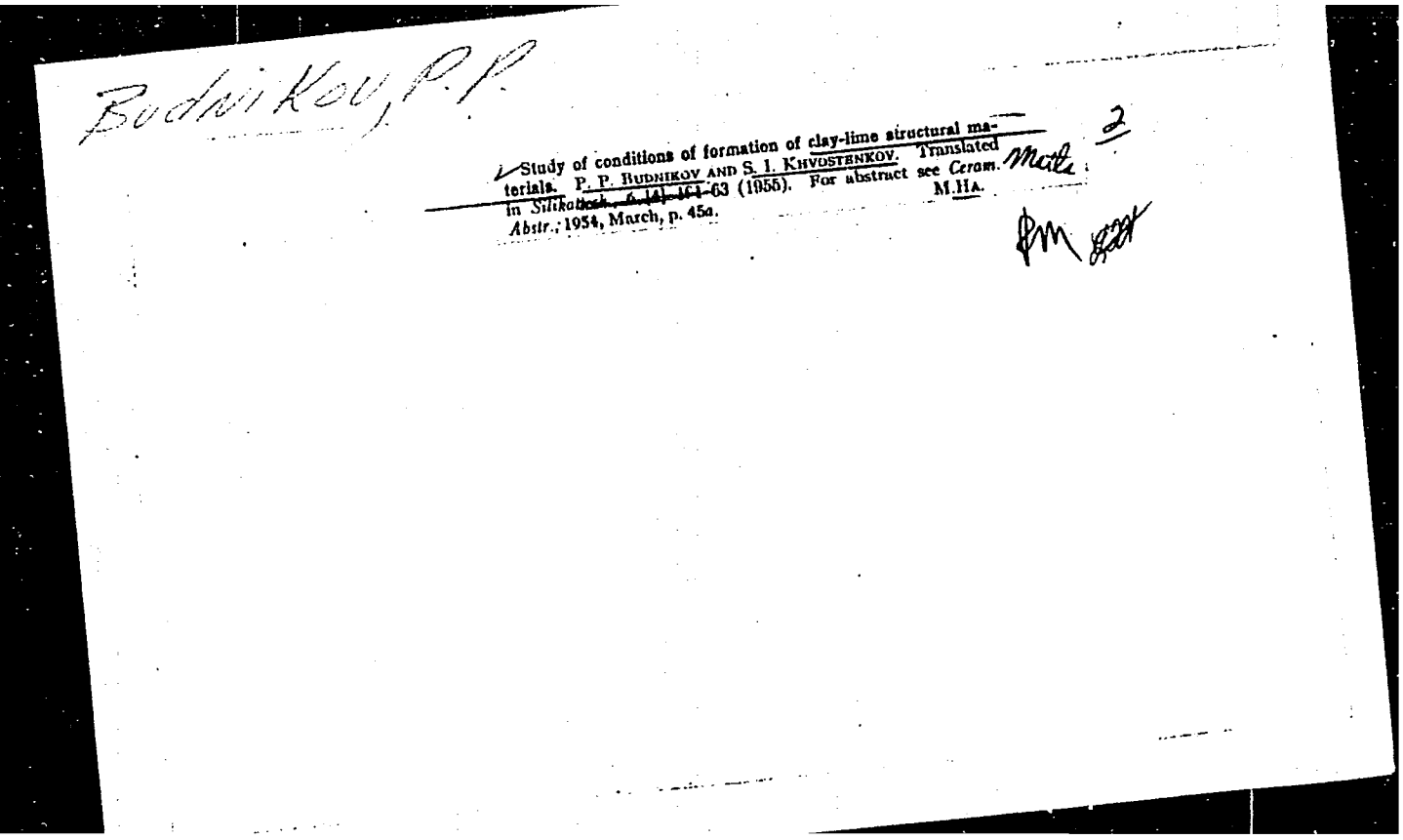


Budnikov, P.P.

Study of conditions of formation of clay-lime structural materials. P. P. BUDNIKOV AND S. I. KHVOSTENKOV. Translated in *Silikattech.*, 6, [4], 161-63 (1955). For abstract see *Ceram. Mater. Abstr.*, 1954, March, p. 45a. M.HA.

2

FD-3361

Budnikov, P. P.

USSR/Chemistry - Sulfides, production of

Card 1/1 Pub. 50 - 5/20

Author : Budnikov, P. P., Corr Mem Acad Sci USSR; Prof Nekrich, M. I.

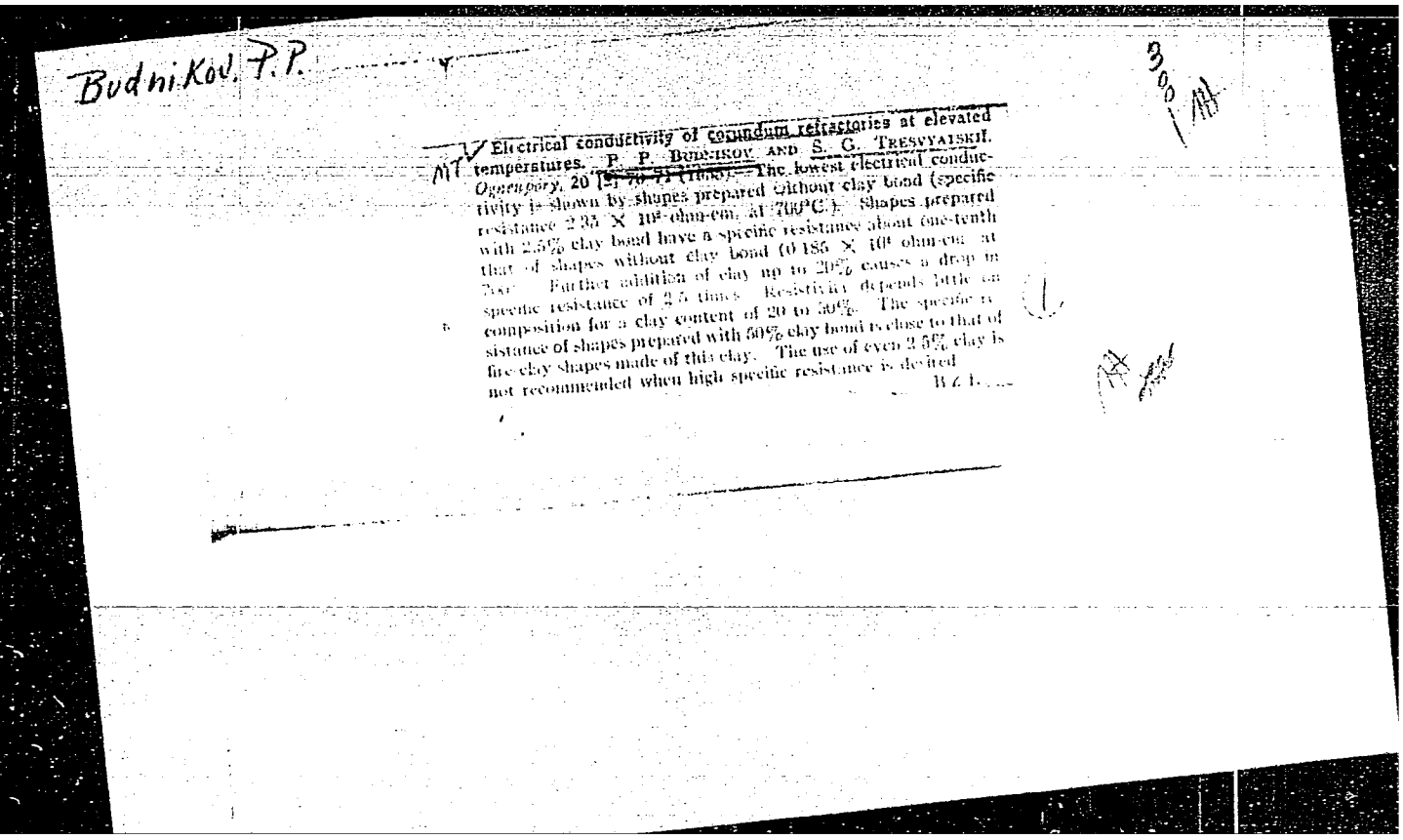
Title : Concerning the mechanism of the reduction of sulfates with carbon in the solid phase

Periodical : Khim. prom. No 7, 402-403, Oct-Nov 1955

Abstract : Investigated the reduction with carbon of sulfates of sodium, magnesium, and alkaline earth metals to sulfides. On the basis of the results obtained, arrive at the conclusion that the process does not take place in the solid phase: there is always formation of carbon monoxide, which acts as the reducing agent. Four references; 3 USSR, one since 1940.

Institution : --

Submitted : --



Budnikov, P.P.

Electrical conductivity of corundum refractories at elevated temperatures. P. P. Budnikov and S. G. Tresvyatskii. *Ogneupory*, 20 [5] 70-71 (1955). The lowest electrical conductivity is shown by shapes prepared without clay bond (specific resistance 2.35×10^8 ohm-cm. at 700°C.). Shapes prepared with 2.5% clay bond have a specific resistance about one-tenth that of shapes without clay bond (0.186×10^8 ohm-cm. at 700°). Further addition of clay up to 20% causes a drop in specific resistance of 2.5 times. Resistivity depends little on composition for a clay content of 20 to 50%. The specific resistance of shapes prepared with 50% clay bond is close to that of fire-clay shapes made of this clay. The use of even 2.5% clay is not recommended when high specific resistance is desired.

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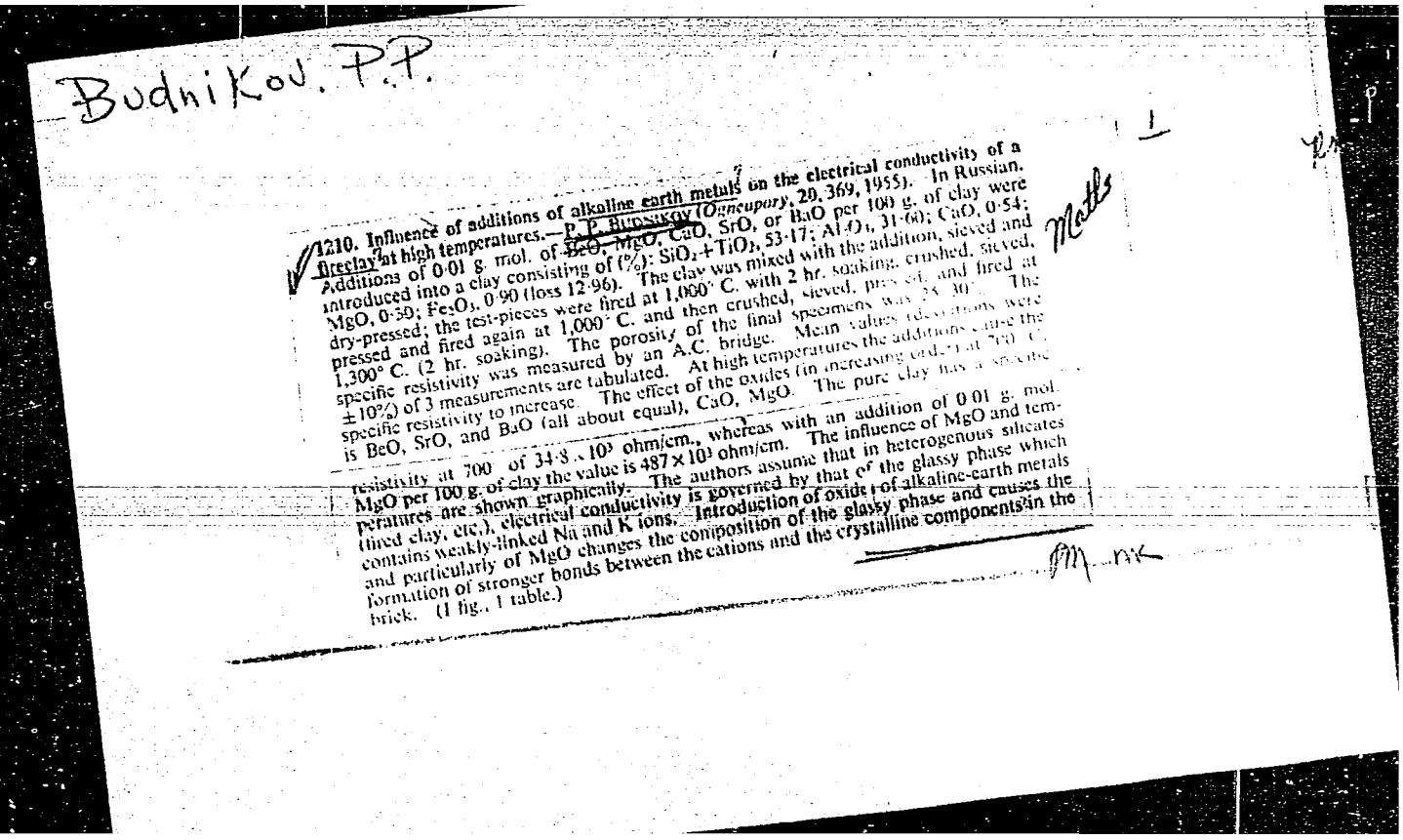


Budnikov, P.P.

1210. Influence of additions of alkaline earth metals on the electrical conductivity of a fireclay at high temperatures.—P. P. Budnikov (*Ogneupory*, 20, 369, 1955). In Russian. Additions of 0·01 g. mol. of BeO, MgO, CaO, SrO, or BaO per 100 g. of clay were introduced into a clay consisting of (%): SiO_2+TiO_2, 53·17; Al_2O_3, 31·60; CaO, 0·54; MgO, 0·50; Fe_2O_3, 0·90 (loss 12·96). The clay was mixed with the addition, sieved and dry-pressed; the test-pieces were fired at 1,000° C. with 2 hr. soaking, crushed, sieved, pressed and fired again at 1,000° C. and then crushed, sieved, pressed, and fired at 1,300° C. (2 hr. soaking). The porosity of the final specimens was 28–30%. The specific resistivity was measured by an A.C. bridge. Mean values (determinations were ±10%) of 3 measurements are tabulated. At high temperatures the additions raise the specific resistivity to increase. The effect of the oxides (in increasing order) at 700° C. is BeO, SrO, and BaO (all about equal), CaO, MgO. The pure clay has a specific resistivity at 700° of $34·8 \times 10^3$ ohm/cm., whereas with an addition of 0·01 g. mol. MgO per 100 g. of clay the value is 487×10^3 ohm/cm. The influence of MgO and temperatures are shown graphically. The authors assume that in heterogenous silicates (fired clay, etc.), electrical conductivity is governed by that of the glassy phase which contains weakly-linked Na and K ions. Introduction of oxides of alkaline-earth metals and particularly of MgO changes the composition of the glassy phase and causes the formation of stronger bonds between the cations and the crystalline components in the brick. (1 fig., 1 table.)

BUZHEVICH,G.A., kandidat tekhnicheskikh nauk; ELINSON,M.P., kandidat tekhnicheskikh nauk

Bibliography ("Granulated blast furnace slags and slag cement." P.P.Budnikov, I.L.Znchke-IAvorskii. Reviewed by G.A.Buzhevich, M.P.Elinzon). TSement 21 no.2:27-28 Mr-Ap'55. (MLRA 8:8)
(Slag cement) (Budnikov,P.P.) (Znachko-IAvorskii,I.L.)

BUDNIKOV, P. P.

USSR/ Chemistry - Chemical technology

Card 1/1 Pub. 116 - 21/25

Authors : Budnikov, P. P., and Ginstling, A. M.

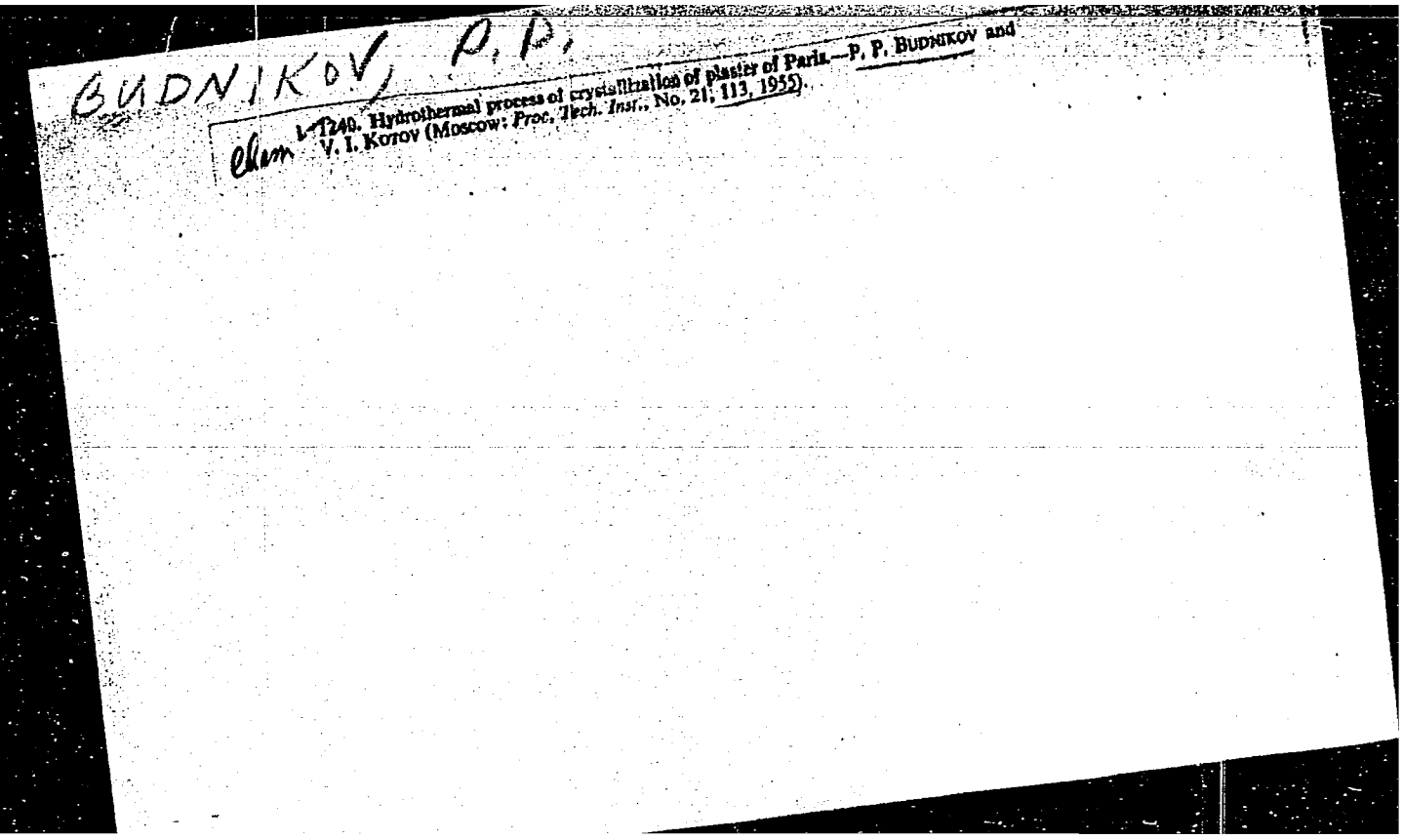
Title : The study of mineralizers

Periodical : Ukr. khim. zhur. 21/1, 109-116, 1955

Abstract : The problems concerning the theory of mineralizers and methods of their investigation are discussed. The question on whether there is any difference between mineralizers and catalysts and whether the mineralizer changes only the rate of the given process or displaces the reaction equilibrium is debated and explained. The present day meaning of the term mineralizer is defined. Five different explanations are given regarding the effect of various accelerators (mineralizers) in reactions of solid substances. Twenty-one references: 19 USSR and 2 German (1897-1953). Graphs.

Institution : .....

Submitted : April 23, 1954



BUDNIKOV, P. P.

Chem

1-7240. Hydrothermal process of crystallization of plaster of Paris.—P. P. Budnikov and V. I. Korov (Moscow: *Proc. Tech. Inst.*, No. 21, 113, 1955).

BUDNIKOV, P.P.

USSR/ Chemistry - Structural materials

Card 1/1 Pub. 116 - 24/24

Authors : Budnikov, P. P.; Gulinova, L. G.; and Torchinskaya, S. A.

Title : Unkilned plaster cement and the increase of its water resistance

Periodical : Ukr. khim. zhur. 21/2, 274-282, 1955

Abstract : Data are presented regarding the manufacture of unkilned highly waterproof structural plaster cement. Four USSR references (1930-1954). Tables; illustrations.

Institution : Acad. of Architecture, Ukr. SSR. Inst. of Structural Materials

Submitted : June 10, 1954

Budnikov, P.P.

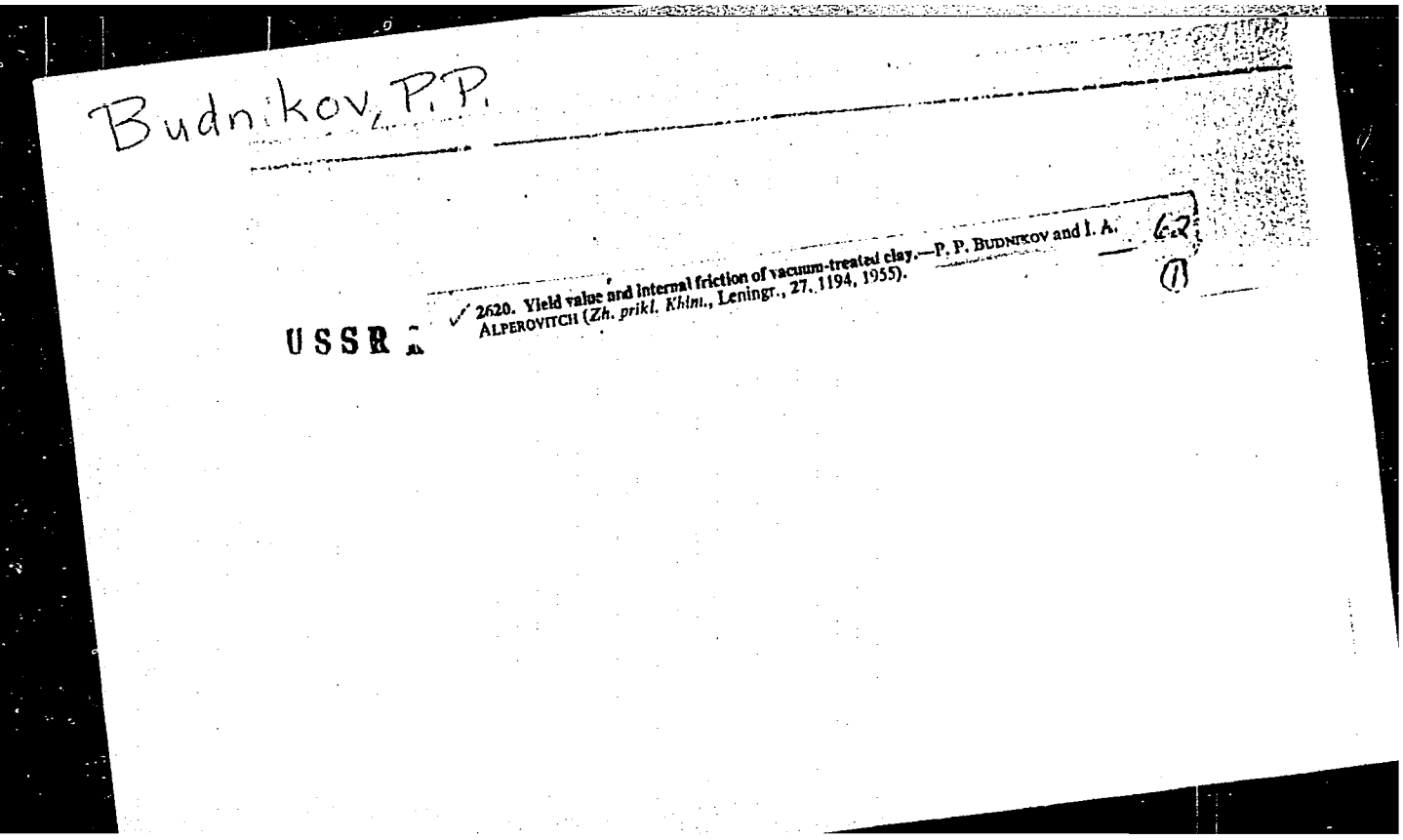
The use of an automatic electronic potentiometer for recording heating curves. P. P. Budnikov and S. G. Tresvetskii. *Ukrain. Khim. Zhur.* 21, 661-5(1955)(in Russian). —The app., whose design is new in the U.S.S.R., is equipped with a slide-wire, converter, rheostat, and amplifier, and records on the same rotating chart not only the temp. of the substance studied but also at the same time the differential temp. between this and an inert substance. These substances are in the two halves of a divided crucible situated in the elec. furnace; there are thermocouple junctions in each of these, and another junction is in ice water. As the substance tested is heated (from 0° to 1000°) measurements are made every 30 sec.; the motor which turns the roll also automatically achieves a balance along the slide wire, as an automatic switch connects it by turns with the two sets of thermocouples. There is a special resistance which shifts the differential curve to the central part of the chart. In the differential curves for $Cr(OH)_3$ and $Mg(OH)_2$ which are shown, there are sharp max. and min. showing reactions that occur at certain temps., while the actual-temp. curves are smooth with little or no inflection at these temps. The instrument, which is shown diagrammatically, is superior to the mirror-galvanometer type in being insensitive to vibration and light.

Malcolm Anderson

BUDNIKOV, P.P.

Blast furnace slags. Nauka i zhizn' 22 no.6:21-22 Je '55. (MLRA 8:8)

1. Chlen-korrespondent Akademii nauk SSSR.
(Slag) (Blast furnaces)



Budnikov, P.P.

USSR

2620. Yield value and internal friction of vacuum-treated clay.—P. P. BUDNIKOV and I. A. ALPEROVITCH (*Zh. prikl. Khim.*, Leningr., 27, 1194, 1955).

62
(1)

AID P - 3724

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 4/16

Authors : Budnikov, P. P. and K. E. Goryaynov

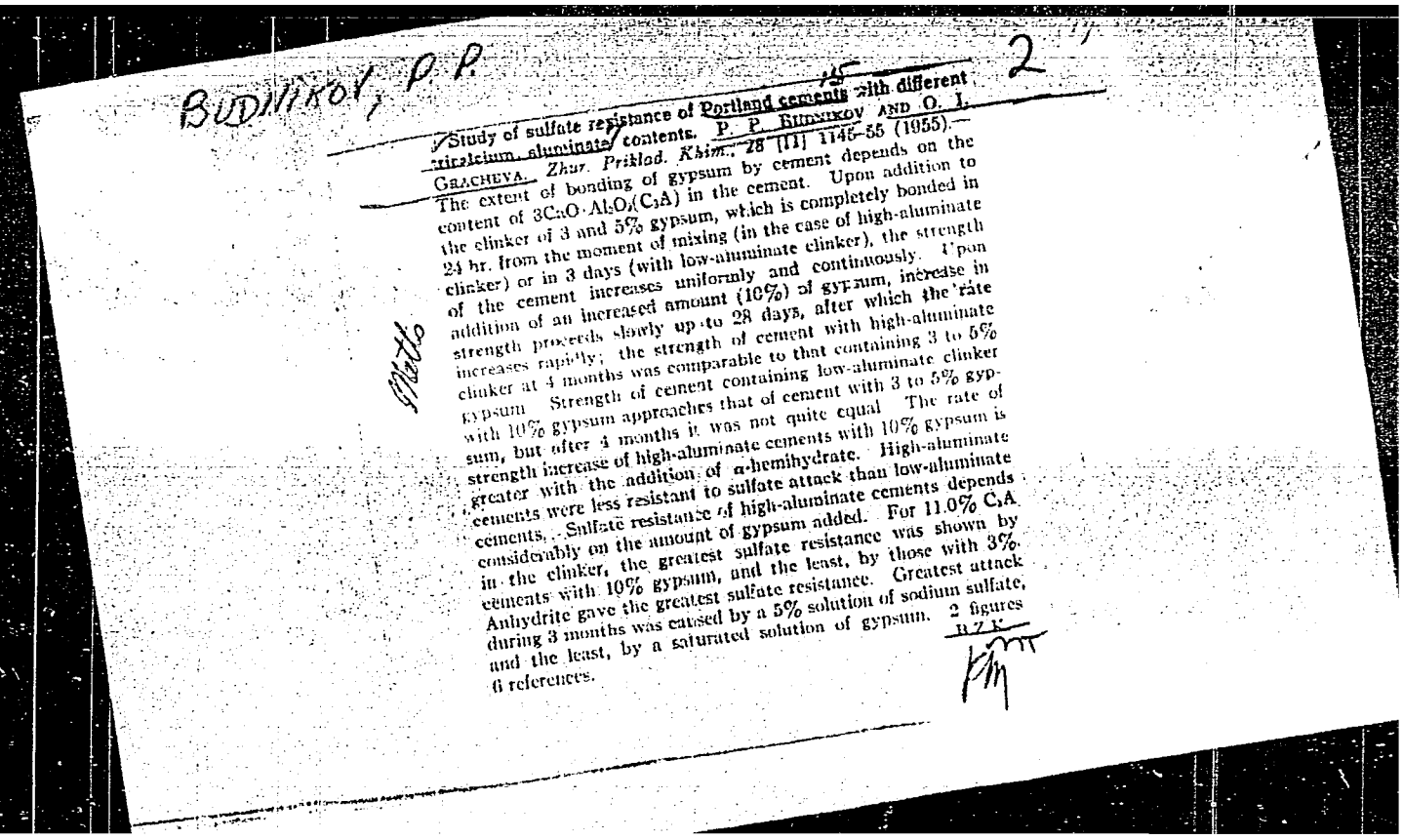
Title : Interaction of lime with Portland cement hydration products and mineral wool fibers

Periodical : Zhur. prikl. khim. 28, 8, 817-821, 1955

Abstract : The effect of Portland cement hydration products on mineral wool (nine different chemical structures) was studied. Mineral wool fibers whose chemical composition corresponds to the crystallization fields C_5A_3 and CA of the ternary system $CaO-Al_2O_3-SiO_2$ could be used for the reinforcement of cement if their diameter exceeds 6 μ. Two tables, 4 photos, 5 references, all Russian (1951-1953).

Institution : None

Submitted : F 20, 1954



BUDNIKOV, P. P.

Study of sulfate resistance of Portland cements with different tricalcium aluminate contents. P. P. Budnikov and O. I. Gracheva. *Zhur. Priklad. Khim.*, 28 [11] 1145–55 (1955).—The extent of bonding of gypsum by cement depends on the content of $3CaO \cdot Al_2O_3$ (C_3A) in the cement. Upon addition to the clinker of 3 and 5% gypsum, which is completely bonded in 24 hr. from the moment of mixing (in the case of high-aluminate clinker) or in 3 days (with low-aluminate clinker), the strength of the cement increases uniformly and continuously. Upon addition of an increased amount (10%) of gypsum, increase in strength proceeds slowly up to 28 days, after which the rate increases rapidly; the strength of cement with high-aluminate clinker at 4 months was comparable to that containing 3 to 5% gypsum. Strength of cement containing low-aluminate clinker with 10% gypsum approaches that of cement with 3 to 5% gypsum, but after 4 months it was not quite equal. The rate of strength increase of high-aluminate cements with 10% gypsum is greater with the addition of α-hemihydrate. High-aluminate cements were less resistant to sulfate attack than low-aluminate cements. Sulfate resistance of high-aluminate cements depends considerably on the amount of gypsum added. For 11.0% C_3A in the clinker, the greatest sulfate resistance was shown by cements with 10% gypsum, and the least, by those with 3%. Anhydrite gave the greatest sulfate resistance. Greatest attack during 3 months was caused by a 5% solution of sodium sulfate, and the least, by a saturated solution of gypsum. 2 figures 6 references.

BUDNIKOV, P. P.

USSR/ Chemistry - Chemical technology

Card 1/1 Pub. 22 - 37/53

Authors : Budnikov, P. P., Memb. Corresp. Acad. of Sc., USSR, and Cherkasova, A. F.

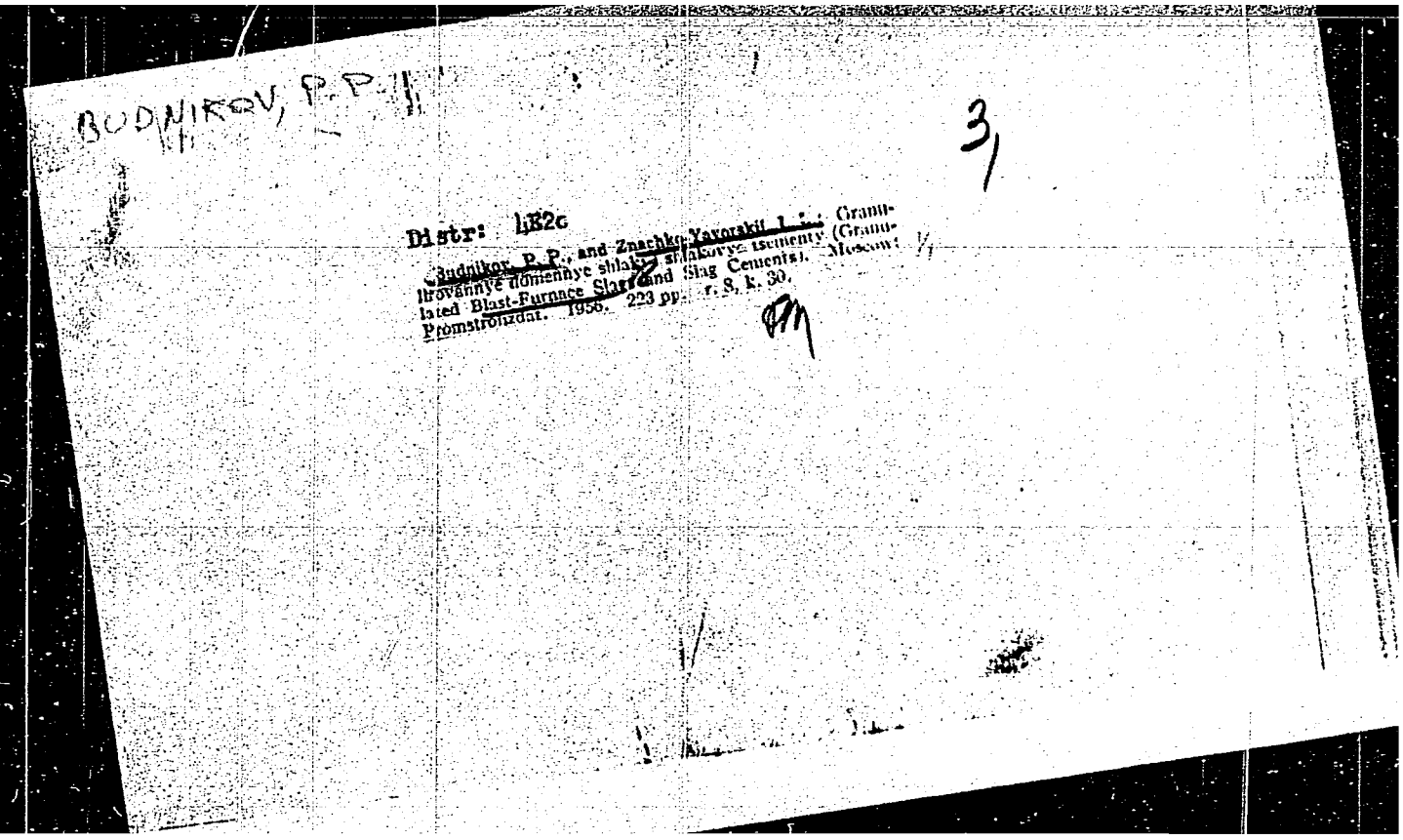
Title : Helenite and its role in the hardening of alumina cement

Periodical : Dok. AN SSSR 102/4, 793-795, Jun 1, 1955

Abstract : Experiments were conducted to determine the effect of the helenite structure and solidification process on its hydraulic activity in alumina cement. It was found that helenite hydrates in the presence of calcium hydroxide and the products of this hydration are calcium hydrosilicates and hydroaluminates as well as aluminum hydroxide. The product formed in the presence of SO_4 ions in the solution was found to be calcium hydrosulfoaluminate. Three USSR references (1934-1953). Tables; illustrations.

Institution : .....

Submitted : December 31, 1954



BUDNIKOV, P P

GINZBURG, David Borisovich, doktor tekhnicheskikh nauk; DELIKISHKIN, Sergey Nikolayevich, kandidat tekhnicheskikh nauk; KHODOROV, Yevgeniy Iosifovich, kandidat tekhnicheskikh nauk; CHIZHSKIY, Anatoliy Fedotovich, kandidat tekhnicheskikh nauk; ZIMIN, V.N., dotsent, retsenzent; KUZYAK, V.A., dotsent, retsenzent; NOKHRATYAN, K.A., kandidat tekhnicheskikh nauk, retsenzent; IVANOV, A.N., dotsent, retsenzent [deceased]; BUDNIKOV, P.P., redaktor; FRADKIN, A.Ye., kandidat tekhnicheskikh nauk, nauchnyy redaktor; GOL'DENBERG, L.G., inzhener, nauchnyy redaktor; GIRZAROVA, I.L., redaktor; GLADKIKH, N.N., tekhnicheskiy redaktor

[Furnaces and driers in the silicate industry] Pechi i sushila silikatnoi promyshlennosti. Izd. 2-oe, perer. Pod red. P.P.Budnikova. Moskva, Gos. izd-vo lit-ry po stroit. materialam, 1956. 455 p. (MIRA 10:3)

1. Deystvitel'nyy chlen Akademii nauk USSR (for Budnikov)
(Kilns) (Clay industries)
(Drying apparatus)

BUDNIKOV, P.P

I-12

USSR /Chemical Technology. Chemical Products and Their Application

Silicates. Glass. Ceramics. Binders.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31645

Author : Budnikov P.P., Ginstling A.M.

Title : Contribution to the Study of Accelerators of Reactions in Mixtures of Solids

Orig Pub: Tr. Soveshchaniya po khimii tsementa. M., Promstroyizdat, 1956, 93-105

Abstract: The effect of mineralizers in solid-phase reactions is considered. The inappropriateness of the term "mineralizer" (M) is noted, and this term should be replaced by "process accelerator", "accelerating additive", or the like. Also are noted the lack of a generally accepted view

Budnikov, P. P.

137-1958-1-177

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 28 (USSR)

AUTHORS: Budnikov, P.P., Tresvyatskiy, S.G., Cherepanov, A.M.

TITLE: Highly Refractive Oxides and Their Products (Vysokoogneupornyye okisly i izdeliya iz nikh)

PERIODICAL: V sbornik Fiziko-khimicheskiye osnovy keramiki, Moscow. Promstroyizdat, 1956, pp 301-324

ABSTRACT: Current views on the processing of raw materials, charges, molding, and sintering, and the properties and areas of application of products made of highly refractive oxides melting at over 2000°: Al_2O_3, BeO, MgO, CaO, ZrO_2, ThO_2, and CeO_2. In accordance with the data of Hume-Rothery (Hume-Rothery, W., Metallurgical Equilibrium Diagrams, London, 1952), practical recommendations are adduced on the choice of material for crucibles and the atmospheres and fluxes to be used in the fusion of 45 different pure metals (from light ones such as Li, Na, K and others to heavy ones like W, U, and others). Bibliography: 124 references.

S. G.

Card 1/1

1. Refractory oxides--Applications

BUDNIKOV, P. P.

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 35 (USSR)

AUTHORS: Budnikov, P. P., Tresvyatskiy, S. G.

TITLE: A Method for Determining the Temperature of the Liquidus and the Solidus in Studies of Fusibility Diagrams and Phase Diagrams of Highly Refractory Oxides (Metodika opredeleniya temperatur likvidusa i solidusa pri izuchenii diagramm plavkosti i diagramm sostoyaniya vysokoogneupornykh okislov)

PERIODICAL: V sb.: Fiz.-khim. osnovy keramiki. Moscow, Promstroyizdat, 1956, pp 520-536

ABSTRACT: Literature data are employed to set forth methods of determining the temperatures of the liquidus in systems where smelting is done in air, in an inert gas atmosphere or in a vacuum, a method of annealing and hardening, and a method of thermal analysis at high temperatures with employment of high-temperature W-Mo thermocouples. The latter method, developed by the Authors, is described in greatest detail. Fusion and crystallization curves of Al_2O_3, $3\,Al_2O_3$, $2SiO_2$, Mg_2SiO_4, $CaAl_2O_4$, and CaF_2, obtained by the W-Mo thermocouple method, are adduced

Bibliography: 32 references.

S. G.

Card 1/1

... oxides--Temperature--Determination 2. Ores--Pro-

BUDNIKOV, P., akademik

At the enterprises and in the institutes of China. Stroi. mat. 2 no.10:35-38 O '56. (MIRA 12:3)

1.AN USSR, chlen-korrespondent AN SSSR.
(China--Building materials industry)

BUDNIKOV, P.

I-10

USSR/Chemical Technology - Chemical Products and Their Applications - Silicates. Glass. Ceramics. Binders.

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9006

Author : Budnikov, P., and Blokh, G.
Inst :
Title : The Indirect Evaluation of the Frost Resistance of Construction Materials.

Orig Pub : Stroit. matialy, izdeliya i konstruktsii, 1956, No 3, 32-34

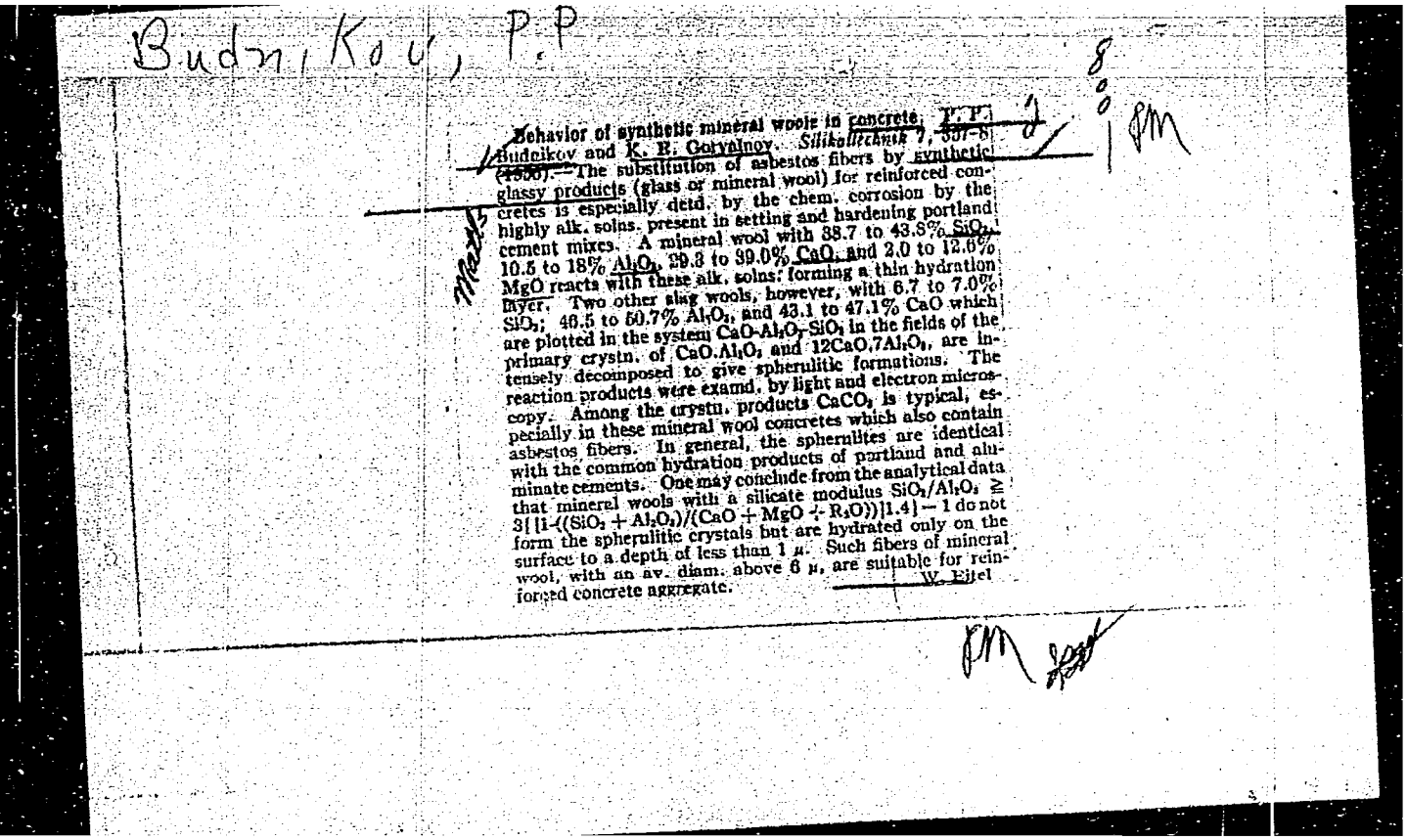
Abstract : An attempt is made to establish a correlation between data on the direct and on the indirect evaluation of the frost-resistance of construction materials on the basis of an analysis of literature data as well as of direct experimental material. It is noted that a successful solution of the problem requires that the

Budnikov, P. P.

Distr: 4E2c

Mineral wool application to water-insulating materials. P. P. Budnikov and L. A. Sukhova. *Trudy Vsesoyus. Nauch.-Issledovatel. Inst. Asbesta, Slyudy, Asbestotsementn. Izdelii* 1936, No. 4, 80-93. Mineral wool was proposed to satisfy requirements of increased production of roof materials. In spite of its great strength, sheets prepd. from pure mineral wool, or from mixts. of mineral wool with pressboard, had a lower tensile strength than pure pressboard sheets, because fibers of mineral wool, having no polar active groups at the surface, possess no van der Waals links between themselves or with org. fibres in mixts. E. Ryshkewitch

Chlen-Korrespondent Akademii Nauk SSSR.



Budn, K.U., P.P.

Behavior of synthetic mineral wools in concrete. P. P. Budnikov and K. B. Gorynlnov. *Silikattechnik* 7, 507-8 (1956).—The substitution of asbestos fibers by synthetic glassy products (glass or mineral wool) for reinforced concretes is especially detd. by the chem. corrosion by the highly alk. solns. present in setting and hardening portland cement mixes. A mineral wool with 38.7 to 43.8% SiO_2, 10.5 to 18% Al_2O_3, 29.3 to 39.0% CaO, and 2.0 to 12.6% MgO reacts with these alk. solns. forming a thin hydration layer. Two other slag wools, however, with 6.7 to 7.0% SiO_2; 46.5 to 50.7% Al_2O_3, and 43.1 to 47.1% CaO which are plotted in the system $CaO-Al_2O_3-SiO_2$ in the fields of the primary crystn. of $CaO.Al_2O_3$ and $12CaO.7Al_2O_3$, are intensely decomposed to give spherulitic formations. The reaction products were examd. by light and electron microscopy. Among the crystn. products $CaCO_3$ is typical, especially in these mineral wool concretes which also contain asbestos fibers. In general, the spherulites are identical with the common hydration products of portland and aluminate cements. One may conclude from the analytical data that mineral wools with a silicate modulus $SiO_2/Al_2O_3 \geq 3[1-((SiO_2+Al_2O_3)/(CaO+MgO+R_2O))1.4]-1$ do not form the spherulitic crystals but are hydrated only on the surface to a depth of less than 1 μ. Such fibers of mineral wool, with an av. diam. above 6 μ, are suitable for reinforced concrete aggregate. W. Eitel

BUDNIKOV, P. P.

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5302

Author: Budnikov, P. P., Sokhatskaya, G. A.

Institution: State All-Union Scientific Research Institute of Cement Industry

Title: Properties of Superfinely Ground Slag-Portland Cement

Original Publication: Tr. Gos. Vses. n.-i. in-ta tsement. prom-sti, 1956, No 9, 3-50

Abstract: Superfine grinding (particles <3 μ 65-85%, specific surface, determined with Deryagin surface-meter, ~25,000 cm^2/g) increases the hydraulic activity of slag-Portland cements (S), prepared with acidic, low basicity and basic slag. Relative increase in strength is considerably higher during the early periods of hardening (1.3 and 7 days). In tests of 1:3 mortars of high consistency, compression strength at the age of one day was as high as 415 kg/cm^2, and of 3 days -- up to 458 kg/cm^2. Relative increase in activity on superfine grinding is greater in the case of S prepared with low-activity

Card 1/2

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5302

Abstract: slag, than in the case of S prepared with active basic slag. Superfinely ground S (SGS) show shorter setting time. Optimal gypsum content of SGS is 5-7%. Strength of SGS is higher following a combined grinding of the components, than on grinding them separately and combining them thereafter. Heat of hardening of SGS is higher than that of conventionally ground S. Strength of concrete made with SGS is greater by 50-155%, than that of concrete made with conventionally ground S, at the same water/cement ratios. Water requirements of concrete made with SGS are higher.

Card 2/2

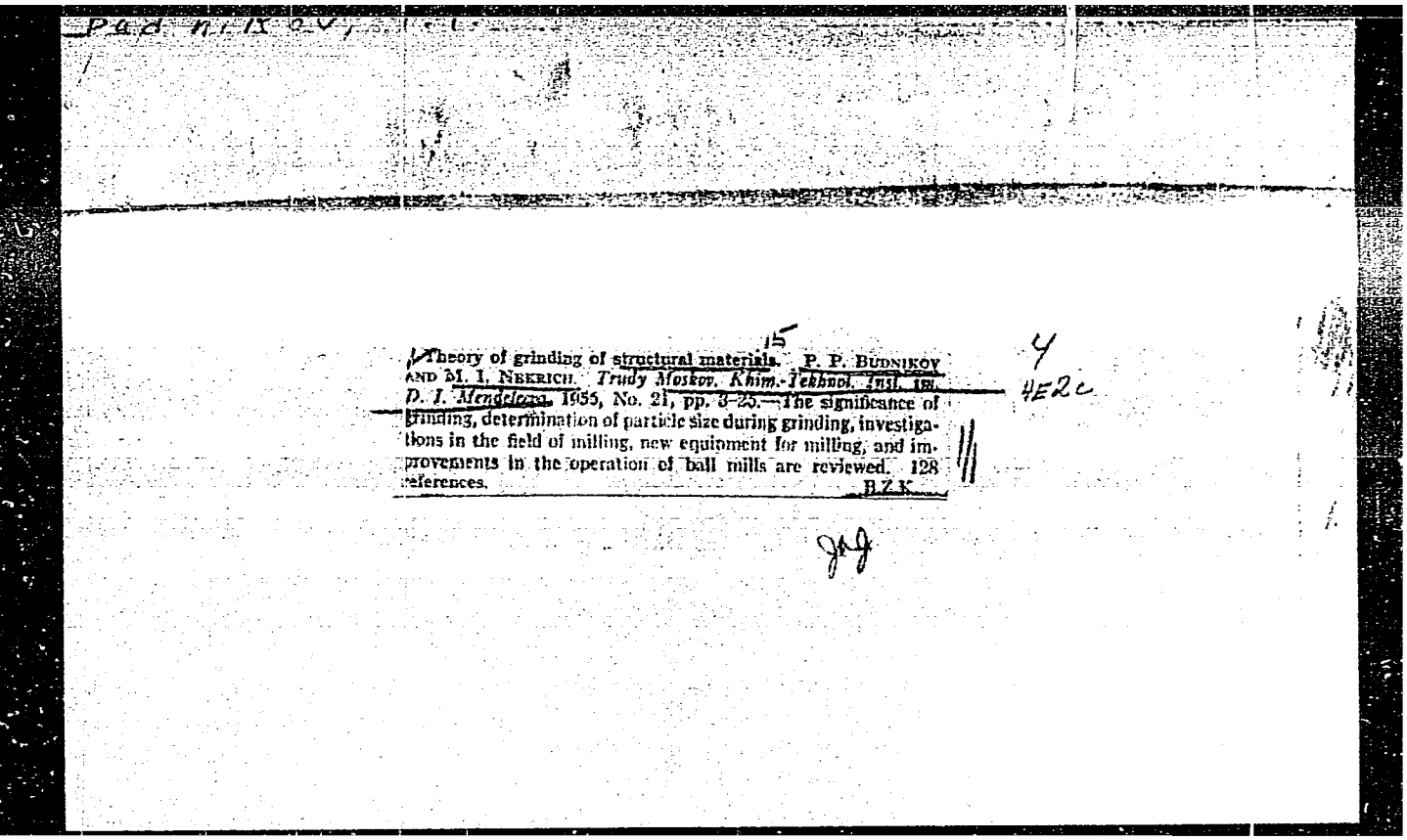
BUDNIKOV, P.P., akademik; BARZAKOVSKIY, V.P., doktor khimicheskikh nauk.

Manufacturing glass of high silica-alumina content in the Chinese People's Republic. Stek. i ker. 13 no.9:31-32 S '56. (MLRA 9:10)

1. Akademiya nauk USSR (for Budnikov)
(China--Glass manufacture)

BUDNIKOV, P.P.; BARZAKOVSKIY, V.P.

Glaze. Stek.i ker. 13 no.11:31-32 N '56. (MLRA 10:1)
(China--Glazes)



Theory of grinding of structural materials. P. P. Budnikov and M. I. Nekrich. *Trudy Moskov. Khim.-Tekhnol. Inst. im. D. I. Mendeleeva*, 1955, No. 21, pp. 3–25.—The significance of grinding, determination of particle size during grinding, investigations in the field of milling, new equipment for milling, and improvements in the operation of ball mills are reviewed. 128 references. B.Z.K.

BUDNIKOV, P. P.

21

The hydrothermal crystallization of $2CaSO_4.H_2O$. P. P. Budnikov and V. I. Kotov. *Trudy Moskov. Khim.-Tekhnol. Inst. im. D. I. Mendeleeva* 1956, No. 21, 118–30.—Eight cryst. modifications of gypsum were detd.: $CaSO_4.2H_2O$, α and β forms of $2CaSO_4.H_2O$, burnt α and β forms of $2CaSO_4.H_2O$, sol. α and β forms of the anhyd. $CaSO_4$, and the insol. $CaSO_4$. The temp. of dehydration of gypsum depended on its purity. The addn. of 1% of salts lowered this temp. considerably. The incongruent m.p. detd. at 125° under 1.3 atm. pressure. 48 references.

R. S. Lubomirski

USSR/Chemical Technology - Chemical Products and Their Application. Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62362

Author: Budnikov, P. P., Kosyreva, Z. S., Kuznetsova, I. P.

Institution: None

Title: Production of Alite-Free Cement and Study of Its Properties

Original Periodical: Tr. Mosk. khim.-tekhnol. in-ta, 1956, No 21, 155-161

Abstract: Investigated was the possibility of producing good quality cement from low grade bauxites characterized by increased content of silica and Fe oxide. The experiments showed that alite-free cement can be produced from low grade bauxites by calcining the mixture of raw materials, consisting of chalk, bauxite and gypsum, at temperatures lower than those that are required in the case of Portland cement. Optimal calcination temperature of alite-free cement containing added gypsum is 1,200°. It is advantageous to add as mineralizer 30% gypsum and 1% coal. The possibility has been demonstrated of

Card 1/2

USSR/Chemical Technology - Chemical Products and Their Application. Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62362

Abstract: obtaining hydraulic cement consisting essentially of dicalcium silicate, monocalcium aluminate and tetracalcium alumoferrite, having satisfactory binding properties.

Card 2/2

BUDNIKOV, P.P.; VOLODIN, P.L.; TRESVYATSKIY, S.G.

Review of data on the system: $CaCl_2$ -- $BaCl_2$. Ukr.khim.zhur.22 no.3:292-294 '56. (MLRA 9:9)
(Chlorides)

BUDNIKOV, P.P., zasluzhennyy deyatel' nauki i tekhniki; YUNG, V.N., doktor tekhnicheskikh nauk, professor.

Review of V.V. Kind's book "Corrosion of cement and concrete in hydraulic structures." Gidr.stroi. 25 no.2:64-65 '56. (MLRA 9:8)

1. Deystvitel'nyy chlen AN USSR i chlen-korrespondent AN SSSR (for Budnikov)
(Hydraulic engineering)(Concrete--Corrosion) (Kind, V.V.)

BUDNIKOV, P.P., chlen-korrespondent Akademii nauk SSSR.

Conference of chemical engineers. Vest. AN SSSR 26 no.10:79-80 O '56. (MLRA 9:11)

(Banska Stavnica, Czechoslovakia--Chemistry, Technical--Congresses)

Budnikov, P.P.

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5276

Author: Budnikov, P. P., Mchedlov-Petrosyan, O. P.

Institution: None

Title: Conference on Utilization of Vibratory Grinding in the Industry of Building Materials

Original Publication: Zh. prikl. khimii, 1956, 29, No 5, 645-650

Abstract: An account of the principal papers presented at the conference.

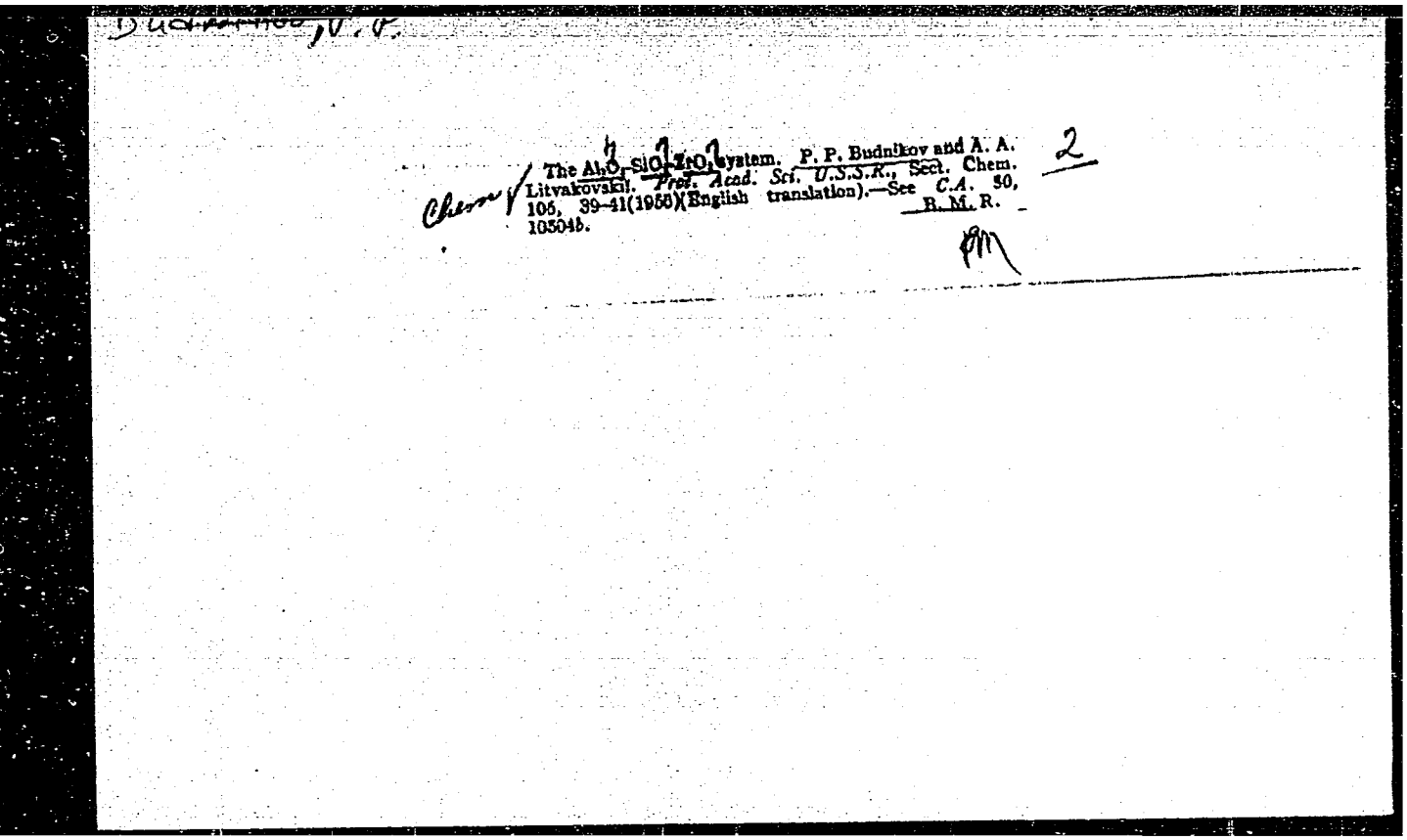
Card 1/1

BUDNIKOV, P.P.; YUNG, V.N.

"Corrosion of cements and concrete in hydraulic structures." V.V. Kind. Reviewed by P.P. Budnikov, V.N. IUng. Zhur.prikl.khim. 29 no.5:807-808 My '56. (MLRA 9:8)
(Cement) (Concrete) (Kind, V.V.)

BUDNIKOV, P.; SILIN, P.

Convention of chemical technologists in Slovakia. Zhur. prikl. khim. 29 no.12:1896-1898 D '56. (MLRA 10:6)
(Banska Stiavnica, Chechoslovakia--Chemistry, Technical--Congresses)



The Al_2O_3-SiO_2-ZrO_2 system. P. P. Budnikov and A. A. Litvakovskii. *Proc. Acad. Sci. U.S.S.R., Sect. Chem.* 106, 39-41(1956)(English translation).—See *C.A.* 50, 10504b. R. M. R.

Budnikov, P.P.

USSR/ Chemistry

Card 1/1 Pub. 22 - 25/54

Authors : Budnikov, P. P., Memb. Corres., Acad. of Sc., USSR, and Litvakovskiy, A. A.

Title : Study of the Al_2O_3-SiO_2 - ZrO_2 system

Periodical : Dok. AN SSSR 106/2, 267-270, Jan 11, 1956

Abstract : The aluminum oxide containing a section of the Al_2O_3-SiO_2-ZrO_2 system was investigated for the purpose of preparing a hitherto unknown structural diagram for this refractory system. Equilibrium diagrams were prepared on the basis of the melting point and phase composition of a larger number of refractory mixtures. The theoretical basis for the technology of high grade refractory lithoidal casting is described. The diagram also made it possible to determine the chemical composition of a batch of refractory casting material. Nine references: 8 USSR and 1 USA (1939-1954). Diagrams.

Institution : .....

Submitted : July 14, 1955

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5133

Author: Budnikov, P. P., Matveyev, M. A.

Institution: Academy of Sciences USSR

Title: Synthesis of Sodium Trisilicate in the Crystalline State and Study of Its Properties

Original Publication: Dokl. AN SSSR, 1956, 107, No 4, 547-550

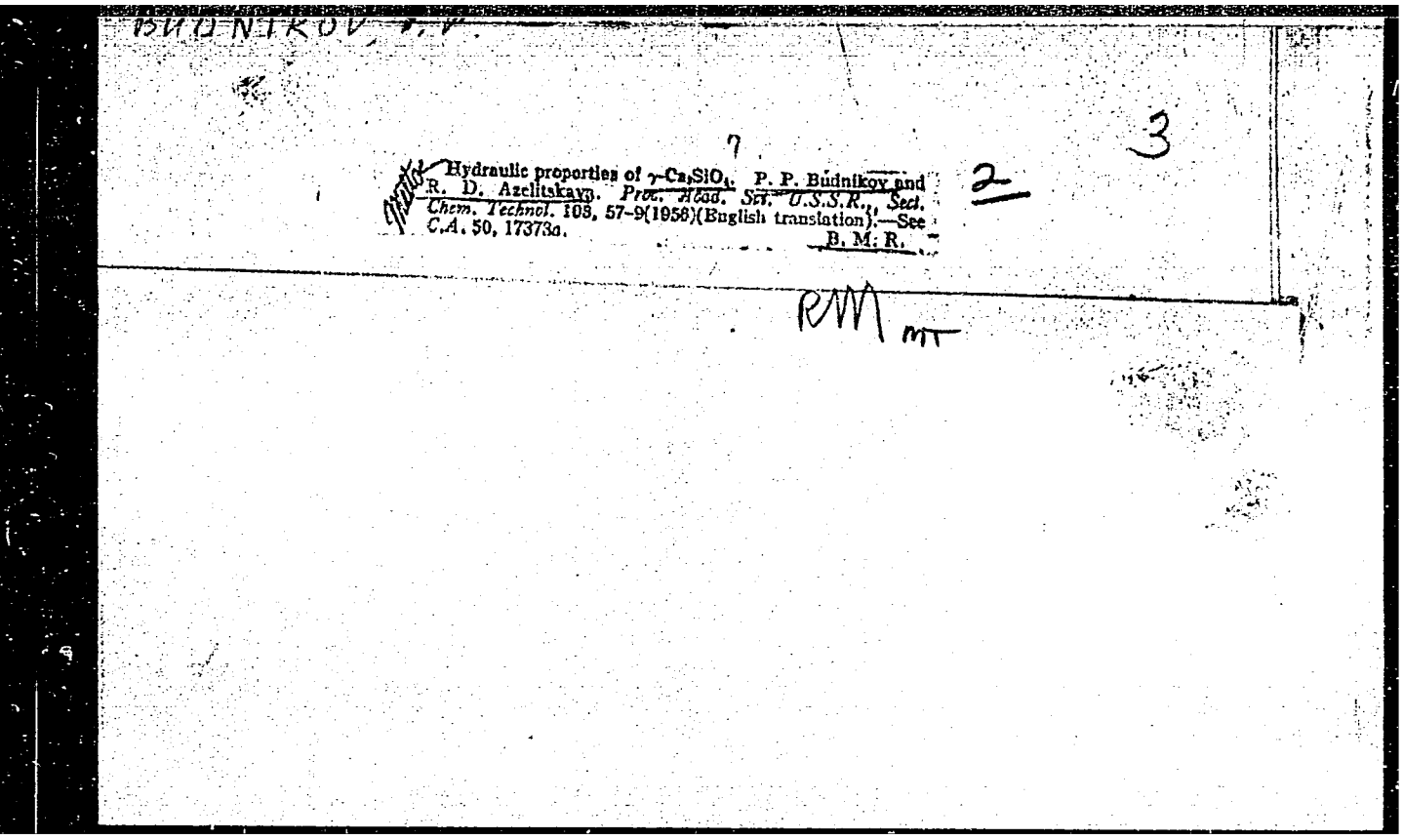
Abstract: The possibility has been ascertained of the formation in the Na_2O-SiO_2 system, of a new compound $Na_2O.3SiO_2$, in crystalline state, within the range 700-750°. There are given: rate of crystallization curve of vitrous $Na_2O.3SiO_2$; results of x-ray investigations (interplanar distances of crystal lattice of $Na_2O.3SiO_2$); optical constants of $Na_2O.3SiO_2$ crystals; density, solubility and coefficient of thermal expansion of crystalline $Na_2O.3SiO_2$. A study has also been made of the hydration capacity of crystalline $Na_2O.3SiO_2$. It is noted that

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5133

Abstract: study of properties of crystalline $Na_2O.3SiO_2$ shows that synthesis of high silica content of crystalline sodium silicates is possible by means of prolonged crystallization of vitrous silicates of the same composition. On the basis of the above-mentioned data assumptions are made concerning the structure of glasses of the Na_2O-SiO_2 system.

Card 2/2



BUDNIKOV, P. P.

7

Hydraulic properties of γ-Ca_2SiO_4. P. P. Budnikov and R. D. Azelitskaya. *Proc. Acad. Sci. U.S.S.R., Sect. Chem. Technol.* 108, 57–9(1958)(English translation).—See *C.A.* 50, 17373a.

B. M. R.

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BUDNIKOV, P.P.

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5286

Author: Budnikov, P. P., Axelitskaya, R. D.

Institution: Academy of Sciences USSR

Title: Binding Properties of Gamma-$2CaO.SiO_2$

Original Publication: Dokl. AN SSSR, 1956, 108, No 3, 515-517

Abstract: The beta- and gamma-form of C_2S were synthesized and their binding properties were studied by testing the compression strength of samples from a solution of 1:2 composition; gamma-C_2S has somewhat better binding properties than beta-C_2S. Addition of beta-C_2S to gamma-C_2S decreases the strength of the latter. Minimum strength is observed with a gamma-C_2S:beta-C_2S ratio of 1:1. The presence of some admixtures in the raw materials, in particular of sesquioxides, has a detrimental effect on strength of the synthesized gamma-C_2S.

Card 1/1

BUDNIKOV, P.P.

PHASE I BOOK EXPLOITATION 83

AUTHORS: Tresvyatskiy, S. G., and Cherepanov, A. M.

TITLE: High-refractory Materials and Oxide Products (Vysokoogneupornyye materialy i izdeliya iz okislov)

PUB. DATA: Gosudarstvennoye nauchno-tekhnicheskoye izdatel'stvo literatury po chernoy i tsvetnoy metallurgii, Moscow, 1957, 246 pp., 3,000 copies

ORIG. AGENCY: None given

EDITORS: Matveyev, M. A.; Ed. in chief: Budnikov, P.P., Academician; Ed. of the Publ. House: Rozentsveyg, Ya.D.; Tech. Ed.: Vaynshteyn, Ye. B.

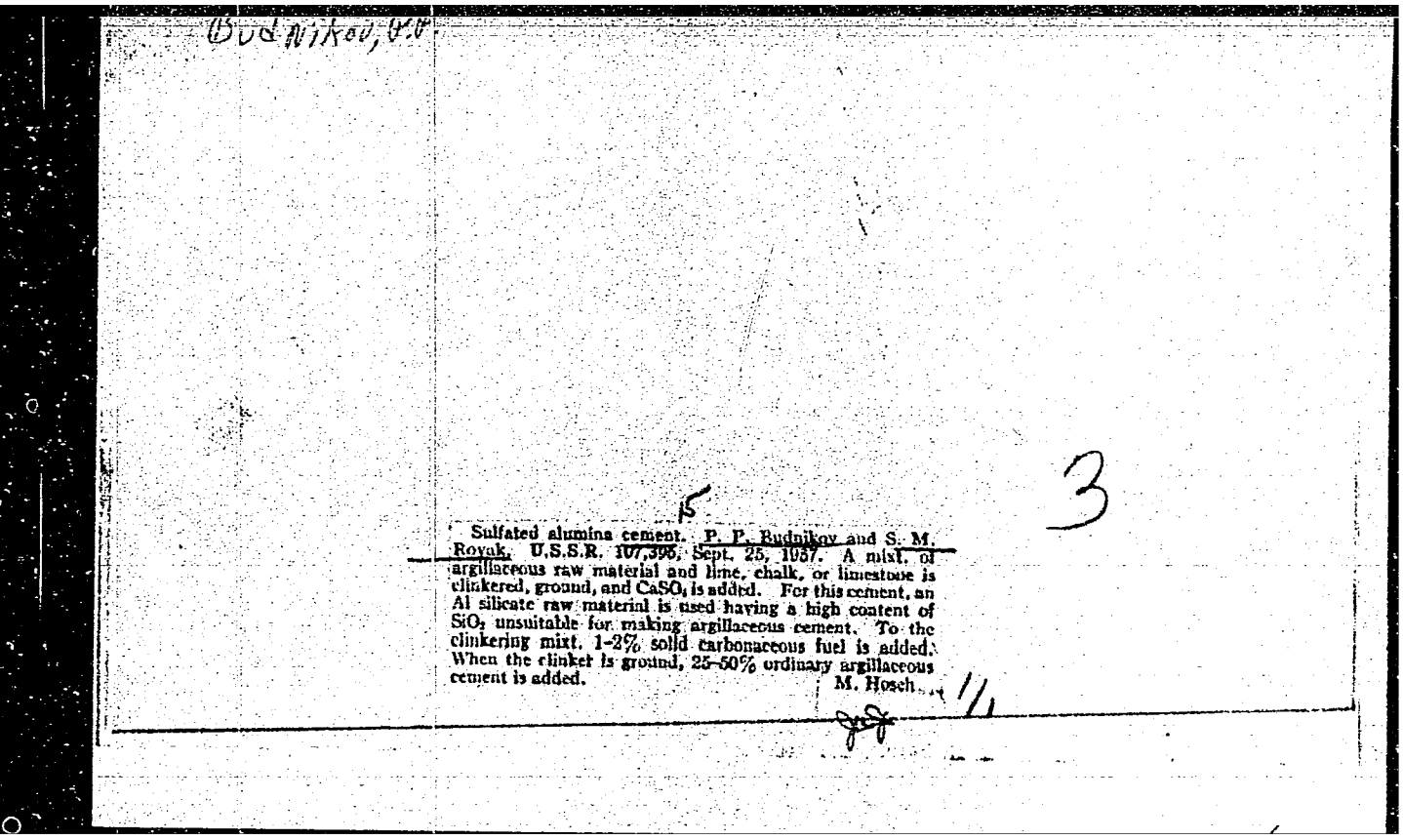
PURPOSE: This book is for engineers and technicians working with refractory materials in the fields of metallurgy and industries using high temperatures.

COVERAGE: The book provides data on the manufacture and uses of high-refractory materials made from pure oxides and presents a method of classifying products made .

Card 1/5

BUDNIKOV, P.P., red.; BUTT, Yu.M., red.; MATVEYEV, M.A., red.; TROKHIMOVSKAYA, I.P., red.; GURVICH, E.A., red.; GILENSON, P.G., tekhn.red.

[Collection of papers on the chemistry and technology of silicates] Sbornik turdov po khimii i tekhnologii silikatov. Moskva, Gos. izd-vo lit-ry po stroit. materialam, 1957. 424 p. (MIRA 11:3)
(Silicates)



Budnikov, P.P.

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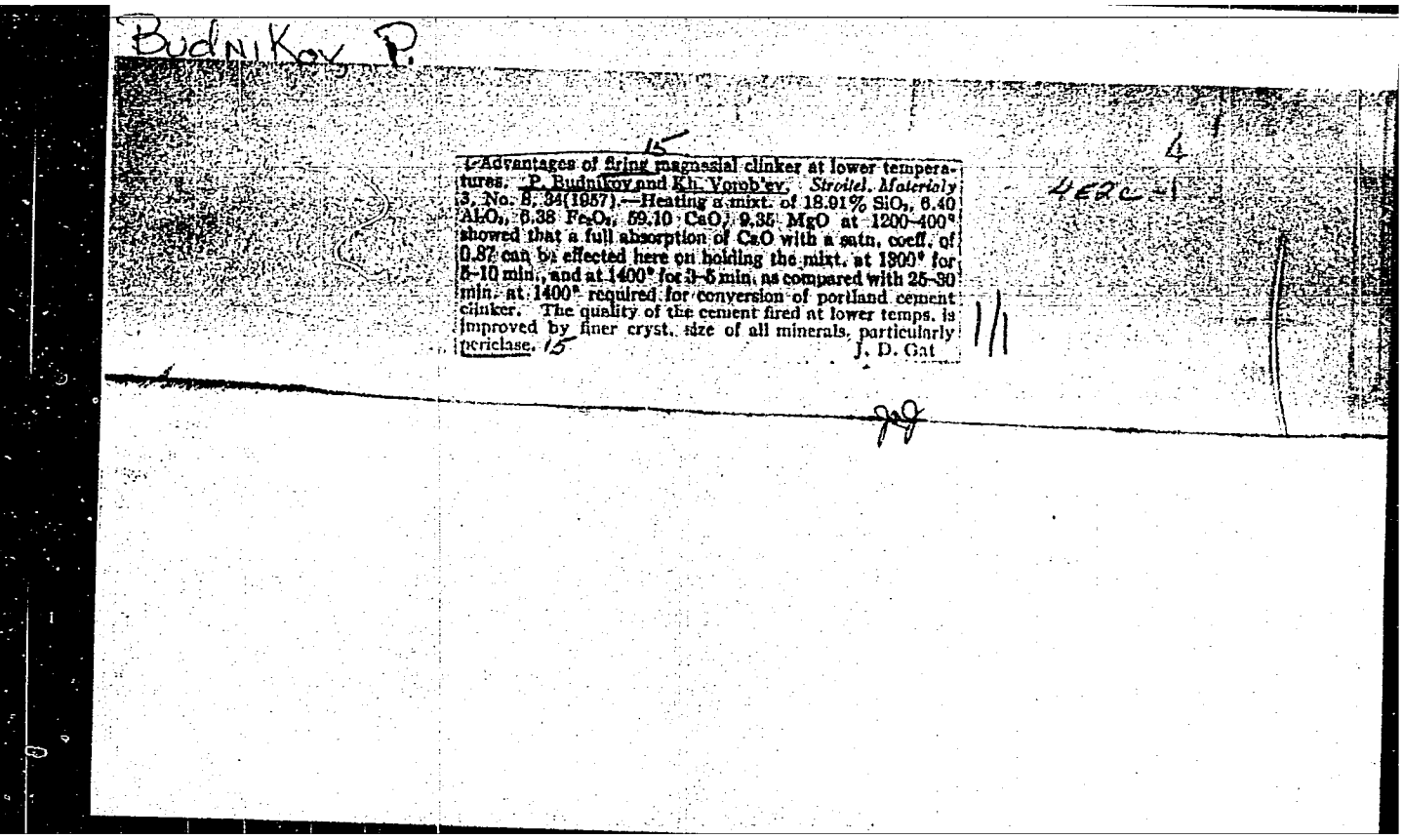
Sulfated alumina cement. P. P. Budnikov and S. M. Royak. U.S.S.R. 107,395, Sept. 25, 1957. A mixt. of argillaceous raw material and lime, chalk, or limestone is clinkered, ground, and $CaSO_4$ is added. For this cement, an Al silicate raw material is used having a high content of SiO_2 unsuitable for making argillaceous cement. To the clinkering mixt. 1-2% solid carbonaceous fuel is added. When the clinker is ground, 25-50% ordinary argillaceous cement is added.

M. Hosch

1/1



Budnikov P.

15

Advantages of firing magnesial clinker at lower temperatures. P. Budnikov and Kh. Vorob'ev. *Stroitel. Materialy* 3, No. 8, 34(1957).—Heating a mixt. of 18.91% SiO_2, 6.40 Al_2O_3, 6.38 Fe_2O_3, 59.10 CaO, 9.35 MgO at 1200–400° showed that a full absorption of CaO with a satn. coeff. of 0.87 can be effected here on holding the mixt. at 1300° for 8–10 min., and at 1400° for 3–5 min. as compared with 25–30 min. at 1400° required for conversion of portland cement clinker. The quality of the cement fired at lower temps. is improved by finer cryst. size of all minerals, particularly periclase. 15

J. D. Gat

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BUDNIKOV, PP

21-4-13/24

AUTHORS: Budnykov, P.P., Member of the Ukrainian Academy of Sciences, and Azelyts'ka, P.D.

TITLE: Effect of Small Additions of Carbonates of Alkaline and Alkaline-Earth Metals on some Properties of Cement Solutions (Vplyv malykh dobavok karbonativ luzhnykh i luzhnozemel'nykh metaliv na deyaki vlastyvosti tsementnoho rozchynu)

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1957, #4, pp 371-374 (USSR)

ABSTRACT: The effect of small additions of carbonates of Li, Na, K, Mg, Ca, Sr and Ba on some properties of cement solutions was investigated. Two samples of different mineralogical composition were taken for investigations. The amount of additions varied from 0.1 to 0.5 %.

It was found that cations depending on their properties may act as surface-active substances and interact mainly with the alumino-ferric components of cement. There is a certain dependence between the effect of these cations on the strength of cement and their atomic properties.

Card 1/2

21-4-13/24

TITLE: Effect of Small Additions of Carbonates of Alkaline and Alkaline-Earth Metals on some Properties of Cement Solutions (Vplyv malykh dobavok karbonativ luzhnykh i luzhnozemel'nykh metaliv na deyaki vlastyvosti tsementnoho rozchynu)

According to the efficiency of interaction, the cations may be arranged in the following order:

$$Li \leftarrow Na \leftarrow K \leftarrow Mg \rightarrow Ca \rightarrow Sr \rightarrow Ba$$

(arrows indicating the direction of increasing efficiency).

Carbonates of alkaline metals in amounts of 0.5 % accelerate strongly the initial setting of cement, but carbonates of alkaline-earth metals (0.1 to 0.5%) retard the initial setting, retardation increasing from Mg to Ba. The final setting is reduced.

The article contains 2 graphs and 3 tables.
There are 3 references all Slavic.

INSTITUTION: Not indicated
PRESENTED BY:
SUBMITTED: 26 November 1956
AVAILABLE: At the Library of Congress

Card 2/2

H.

POLAND/Chemical Technology - Chemical Products and Their Application - Glass, Ceramics, Binders. Silicates.

Abs Jour : Ref Zhur - Khimiya, No 9, 1958, 29527

Author : Jefriemow, G.L., Budnikow, P.P., Barzakowski, W.P.
Inst : -
Title : Artistic Porcelain in the Chinese Peoples Republic.

Orig Pub : Szklo i ceram, 8, No 4, 106-110 (1957) (in Polish)

Abstract : Translation. See RZhKhim, 1957, 38369, 38370.

Card 1/1

21

BUDNIKOV, P.

USSR/General Problems. Methodology. History. Scientific Institutions and Conferences. Teaching. Problems of Bibliography and Scientific Documentation A

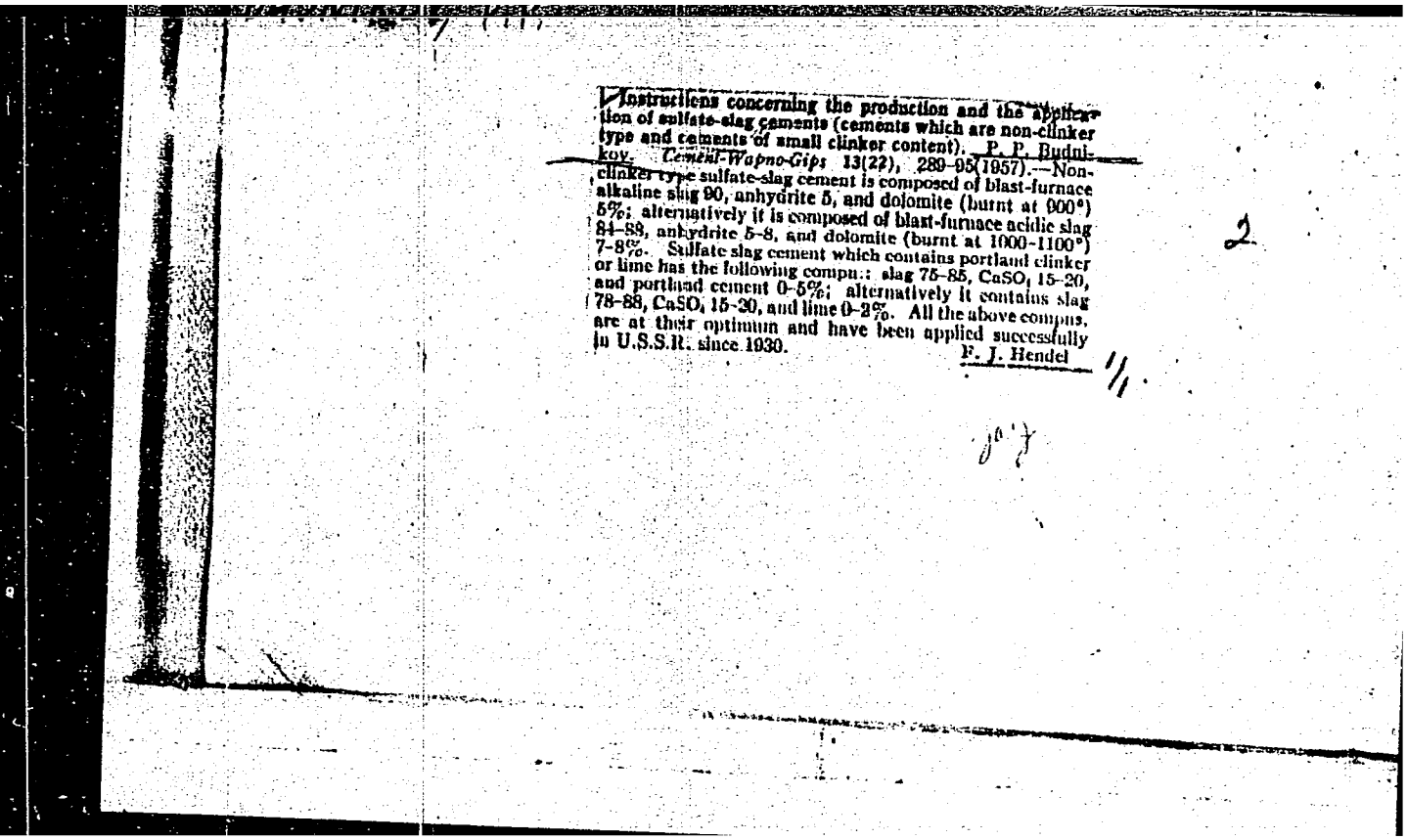
Abs Jour : Ref Zhur-Khimiya, No 4, 1958,10218

Author : P. Budnikov
Inst : Not Given
Title : Works of Soviet Scientists in the Field of Silicates

Orig Pub : Stroit. materialy, 1957, No 10, 13-17

Abstract : On the 40th anniversary of the Great October Socialist Revolution.

Card 1/1



Instructions concerning the production and the application of sulfate-slag cements (cements which are non-clinker type and cements of small clinker content). P. P. Budnikov. *Cement-Wapno-Gips* 13(22), 289–95(1957).—Non-clinker type sulfate-slag cement is composed of blast-furnace alkaline slag 90, anhydrite 5, and dolomite (burnt at 900°) 5%; alternatively it is composed of blast-furnace acidic slag 84–88, anhydrite 5–8, and dolomite (burnt at 1000–1100°) 7–8%. Sulfate slag cement which contains portland clinker or lime has the following compn.: slag 75–85, $CaSO_4$ 15–20, and portland cement 0–5%; alternatively it contains slag 78–88, $CaSO_4$ 15–20, and lime 0–2%. All the above compns. are at their optimum and have been applied successfully in U.S.S.R. since 1930.

F. J. Hendel

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BUDNIKOV, P.P.

"Silicon organic compounds in industry" by A.P. Kreshkov. Reviewed by P.P. Budnikov. Stek.i ker. 14 no.6:29-30 Je '57. (MLRA 10:7)

1. Akademik Akademii nauk USSR. 2. Chlen-korrespondent Akademii nauk SSSR.

(Silicon organic compounds)

BUDNIKOV, P.P., akademik; MCHEDLOV-PETROSYAN, O.P.

Theory of the "pyrocatalysis method" of brick firing. Stek.i ker. 14 no.8:11-13 Ag '57. (MIRA 10:10)

1. Akademiya nauk USSR (for Budnikov).
(Brickmaking)

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1842. Letter to the editor.—P. Budnikov, S. Tresvyatskii, and N. Zvereva (*Ogneupory*, 22, 139, 1957). In Russian. Clarification of some data quoted in "New refractories for the melting and casting of high-melting metals" by G. V. Samsonov (*Ogneupory*, 21, 122, 1956). Met Matls

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BUDNIKOV, P.P.

AUTHORS: Budnikov, P.P. and Zakharov, L.A. 73-2-16/22

TITLE: Preparation of quick-hardening hydraulic binders from non-bauxite raw materials. (K voprosu polucheniya bystrotverdeyushchikh gidravlicheskikh vyazhushchikh na neboksitovom syr'ye).

PERIODICAL: "Ukrainskiy Khimicheskiy Zhurnal" (Ukrainian Journal of Chemistry), Vol.23, No.2, March-April, 1957, pp.239-242 (USSR).

ABSTRACT: An increased content of silicon dioxide (more than 10%) in aluminous cement considerably lowers its mechanical strength. This is explained by the formation of a tertiary compound ($Ca_2Al_2SiO_7$) in the aluminous cement (1) during the burning process. In their investigations concerning the preparation of quick-hardening binders the properties of the following aluminous component raw materials were studied: anorthosite, nephelinic syenite, alunitised clay and cinders carboneceous shale. Lime-travertin was used as lime component. Anorthosite was shown to be the most suitable of the above raw materials. Table 1 gives the average chemical composition (in %) of anorthosite and lime-travertin. Diagram 1 shows the heat curves for 2 anorthosite test samples. Experiments showed that quick-

Card 1/3

Preparation of quick-hardening hydraulic binders from non-bauxite raw materials. (Cont.)

hardening aluminabelite cements can be produced from anorthosite and lime-travertin by burning the mixture at 1100 C. The produced cements do not reveal anomalous properties: they have only relatively lowered activity, dependent on the structure of the clinker. Belite is the main component (together with calcium aluminate) of cement with regard to the mineralogical structure of the latter. The characteristic properties of the produced cements are not restricted to the speed of hardening during the first 72 hours. A steady increase of strength, especially during the 3rd - 6th month can be observed which is due to the presence of belite (Diagram 3). Curves are given of the increase in strength of cement samples tested for compression. These are characteristic for the whole range of tested cements. Table 2 gives the permissible variation in mechanical strength of tested samples of one group of cements. A microphotograph of a section of a clinker (with added fluorspar) is included. (Fig.2).

[redacted]

Preparation of quick-hardening hydraulic binders from non-bauxite raw materials. (Cont.) 3-2-16/22

There are 2 tables, 2 diagrams, 1 photograph and 3 Slavic references.

SUBMITTED: October 24, 1956.

AVAILABLE: Library of Congress

Card 3/3

BUDNIKOV, P.P.

Influence of firing temperature of the cement mixture on the microstructure and phase composition of high magnesium clinkers. P. P. Budnikov and Kh. S. Vorob'ev. Ukrain. Khim. Zhur. 23, 511-6(1957)(in Russian).—Mixes contg. 16-16.5% MgO give stronger and more H_2O-resistant cements than those contg. 18.5%. The structure of the clinkers was investigated petrographically, by x-rays, and by chem. analysis. A mixt. of SiO_2 15.6, Al_2O_3 6.1, Fe_2O_3 9.7, CaO 50.9, and MgO 18.5% gave clinkers of the following compns. (temp. of firing, % MgO present as submicroscopic crystals of periclase, as large crystals, as vitreous soln., as aluminoferrite solid soln., and combined in silicates, given): 1250°, 5.7, 4, 1.5, 0.5, 6.8; 1350°, 6.6, 4, 2.2, 0.5 5.2; 1450°, 4.5, 8, 3.1, 0.5, 2.4. The higher temp. of firing promoted the formation of larger crystals from all cryst. materials.

John Howe Scott

BUDNIKOV, P.P.; KOSYREVA, Z.S.

Study of molten protland cement. Trudy MKHTI no.24:81-84 '57. (MIRA 11:6)
(Portland cement)

BUNDIKOV, P.P.; PETROVYKH, N.V.

Influence of dispersity of mass and temperature in hydrothermal processing on the formation and properties of silicate building materials. Trudy MKHTI no.24:96-110 '57. (MIRA 11:6)
(Silicates) (Building materials—Testing)

Budnikov, P. P.

7182

CHEMISTRY AND TECHNOLOGY OF SILICATES IN CHINA. P. P. Budnikov, and V. P. Barzakovskii. Vestnik Akad. Nauk S.S.S.R. 27, 74-9(1957) Feb. (In Russian)

A review is given of the ceramic research and industrial development in China. (R.V.J.)

chem

BUDNIKOV, P.P.; AZELITSKAYA, R.D.

Effect of small quantities of certain additives on the binding properties of γ-dicalcium silicate and γ-C_2S. Zhur.prikl.khim. 30 no.1:162-163 Ja '57. (MLRA 10:5)
(Calcium silicates) (Cement)

BUDNIKOV, P.P.; MCHEDLOV-PETROSYAN, O.P.

"The chemistry of cements" by N.A. Toropov. Reviewed by P.P. Budnikov, O.P. Mchedlov-Petrosian. Zhur.prikl.khim. 30 no.4:664 Ap '57. (MLRA 10:7)
(Cement) (Chemistry, Technical) (Toropov, N.A.)

BUDNIKOV, P. P.

Hydrothermal hardening of structural materials based on new forms of raw products. P. P. Budnikov and Yu. M. Butt. *Zhur. Prikład. Khim.* 30, 787–91(1957); cf. *C.A.* 49, 16331a.—The crushing strengths *k* of briquets made from dolomite, tripolite, or clay without sand were 112, 300, and 225 kg./sq. cm., resp. The corresponding values of *k* of briquets contg. 50% quartz sand increased to 200, 387, and 312 kg./sq. cm., resp. These values changed after 28 days' storage in water to 225, 850, and 301 kg./sq. cm. and to 325, 566, and 313 kg./sq. cm. after subsequent drying to const. wt. Petrographic examn. suggested that the reaction between dolomite and $Ca(OH)_2$ in the autoclave treatment resulted in the formation of $xCaCO_3.yCaO.nH_2O$ and $xMgCO_3.yCaO.nH_2O$. Increasing strength after drying was ascribed to the dehydration of the colloidal mass formed in the cementing substances. I. Bencowitz

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Budnikov P.P.

USSR/General Problems. Methodology. History. Scientific Institutions and Conferences. Instruction. Questions Concerning Bibliography and Scientific Documentation A

Abs Jour : Ref Zhur-Khimiya, No 3, 1958, 6819

Author : P. P. Budnikov
Inst :
Title : 40 Years of Soviet Science in Region of Chemistry and Silicate Technology

Orig Pub : Zh. prikl. khimii, 1957, 30, No 10, 1425-1439

Abstract : No abstract

Card 1/1

BARTA, Rudol'f (Praga)

"Granulated blast-furnace slag and slag cements" by P.P. Budnikov and I.L. Znachko-IAvorskii. Reviewed by R. Barta. Zhur.prikl.khim. 30 no.12:1880 D '57. (MIRA 11:1)
(Slag) (Slag cement)
(Budnikov, P.P.) (Znachko-IAvorskii, I.L.)